

FINANCIAL TIMES

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LAW SUMMARY

Party attacks Smith's policy

Rhodesian Parliament is to debate proposals to deal with discrimination. Mr. Smith's Government, under attack from the opposition, has rejected the proposals. Mr. Smith's Government, under attack from the opposition, has rejected the proposals.

Slower rise in food prices

FOOD PRICES rose this month at less than half the rate in January, according to the latest Financial Times Grocery Price Index. Although dairy products, coffee, some bread and preserves all went up, there was a sharp fall in the cost of meat and fruit.

Italy seeks agreement on IMF aid

ITALY is expected to receive a further stand-by credit from the International Monetary Fund, after talks in Rome between Italian officials and a visiting team of IMF experts.

Consumers feel less confident

CONSUMERS have been taking a much more pessimistic view of the future, judging by the latest Financial Times survey of consumer confidence.

Caution urged on accounting

INFLATION ACCOUNTING problems are too complex and not yet widely enough understood to be resolved by a revolutionary changeover to a completely new accounting system, according to Price Waterhouse, the international accounting firm.

Heath urges action on direct elections for Europe

MR. EDWARD HEATH yesterday warned the Government that it would fail the country's EEC partners and humiliate Britain if it continued to stall in the face of a bill for direct elections to the European Parliament.

Longbridge issue

In Birmingham shop stewards and up to 1,000 toolmakers at the Longbridge assembly plant, the largest single group of the 3,000 toolmakers on strike, are to decide whether to obey official union instructions to return to work.

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Portugal package a move to prevent new emergency

BY DIANA SMITH Lisbon, Feb. 27

After seven months of hesitant debate, Portugal's minority Socialist Government has finally moved to stave off national bankruptcy and avert the danger of a return to authoritarian rule.

The major package of economic measures announced at the week-end, including a 15 per cent devaluation of the escudo, is also intended to restore the country's international creditworthiness on the eve of its application to join the EEC and further efforts to mobilise financial aid from Western industrialised nations.

Inflationary

Later in the year, it hopes to mobilise a \$1.5bn. international rescue operation to be financed by the U.S., EEC and Japan.

NEB talks on Leyland investment to-day

BY DAVID CHURCHILL AND TERRY DODSWORTH

TWO CRUCIAL MEETINGS which could affect the future of Leyland's Leyland, which employs 30,000 workers, are held off and the bulk of production is stopped by an unofficial strike of toolmakers, are being held today.

Longbridge issue

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Heath urges action on direct elections for Europe

MR. EDWARD HEATH yesterday warned the Government that it would fail the country's EEC partners and humiliate Britain if it continued to stall in the face of a bill for direct elections to the European Parliament.

Time, he said, was running out fast. If the target of summer 1978 for the first such elections was to be met, legislation would have to be introduced in the Commons without further delay.

Caution advised on spending cuts

BY ANTHONY HARRIS

CUTTING PUBLIC expenditure is not a panacea, and the present Government strategy may be more deflationary than was intended, according to a distinguished group of economists, including Sir Alec Cairncross, former chief economic adviser to the Government.

Interest rates

Bank interest rates will go up to 8 per cent. Banks will soon provide more favourable interest rates for investment credits and credits for purchase of new machinery.

Big risks

Apart from Sir Alec, the group includes Mr. Michael Posner, who retired in September as the Government's deputy economic adviser.

Mythology

However, they endorse the basic strategy when they say that even worse risks would be involved in any policy which was either more deflationary or more expansive.

Jaguar recall

The toolmakers' strike has coincided with several minor disputes at Leyland Cars which affected 30,000 workers and stopped production of all car models except the Mini, Range Rover, Maxi and Princess.

TUC seeks £100m. jobs subsidy plan

BY CHRISTIAN TYLER, LABOUR CORRESPONDENT

THE TUC wants the Government to invest £100m. in a job subsidy scheme as part of an expansionary Budget designed to raise industrial output and tackle unemployment.

Expansion

The TUC wants controlled expansion of the economy at an estimated cost of £2.4bn. of which by far the largest part, £1.5bn., would be income tax cuts.

Builders to receive cold comfort on expenditure

BY ADRIAN HAMILTON

THE GOVERNMENT is giving the cold shoulder to construction industry pleas that it take urgent action to help reverse the decline in the construction market.

In a paper in which the National Economic Development Council's Mr. Peter Shore, Government Secretary, is thought to argue that there is little that can be done to prevent public expenditure cuts from further damaging the hard-pressed industry.

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LOMBARD

Lost production now discovered

BY SAMUEL BRITTON

ONE OF the disadvantages of a rapid rate of inflation is that it devalues not only the currency, but also official statistics of output and volume, which become less reliable. This is more than a curiosity, as such statistics are used not only by Government...

Revision

As industrial production is about half of GNP, the effect of the revision is likely to raise the output-based estimate of GNP for that year by 5 per cent, and also to reduce the discrepancy between it and the expenditure-based estimate.

Distortion

The Production Index is expected to a specific source of distortion resulting from the fact that the prices actually paid for fixed price contracts will be lower than the current prices recorded in the wholesale price index.

The problem is greatest in the engineering industry which accounts for a quarter of the net output in manufacturing and where delivery periods of several months are common.

THE WEEK IN THE COURTS

Lords uphold basis for bill of exchange

BY JUSTINIAN

IT IS a deep-rooted concept of English commercial law that a claim for unliquidated damages under a contract of sale is no defence to a claim under a bill of exchange accepted by the purchaser.

A seller and a buyer who agree upon payment by acceptance of bills of exchange do so not simply upon the basis that credit is given to the buyer so that the seller must in due course sue for the price of the contract of sale.

It is conceivable that an agreement between the parties to go to arbitration on their disputes under a contract of sale might embrace liability under the bill of exchange, but for it to cover the latter the arbitration clause must be very definite and clear.

Venture

In the case before the House of Lords, the bills had been given in part payment for the price of 12 textile machines sold by an English company to a German buyer.

venture for the manufacture of jersey material in Bietigheim, Germany, where Kammgarn carried on business. The venture was organised through a German limited partnership formed in January, 1970, by a partnership agreement in writing.

Kammgarn was originally not party to that agreement; but as Nova was aware, it was one of several beneficiaries for whom a German trustee company's interest in the partnership was held.

Various disputes arose between the parties. The first few bills of exchange were paid on maturity, but at the end of 1973 Nova was informed that Kammgarn would not meet the remaining bills.

Defence

Later it issued further writs relating to the remaining bills. Kammgarn wished to assert against Nova by way of defence, set-off or counterclaim that there had been mismanagement of the new limited partnership business that had in fact collapsed, for which, it blamed Nova.

SOCCER BY JAMES FRENCH

Even but brilliant game

AN EXCITING MATCH of high quality was foreseen when the F.A. Cup fifth-round draw pitched together the finalists of eight months before, Southampton and Manchester United.

Manchester United are aristocrats. And just as the advent of Ball has done so much for Southampton, since the return of Buchan, their captain, after a long injury absence, United have lost only once in 13 games.

United led after 44 minutes when Greenhoff (J.) lofted ball to the far side goal which Mansel headed in. Channon's surprising corner goal 51 minutes later when Stepany brought down and Peacher scored penalty.

Arsenal's undistinguished exit

LONDON'S LAST representative, Arsenal, made an undistinguished exit from the F.A. Cup at Ayresome Park, where Middlesex trounced them 4-1.

What was so disappointing about this heavy defeat was that it was inflicted by a competent team playing rather ordinary football, and owed rather more to their own defensive deficiencies than to the ability of the opposition.

Both occasions, Mills was the executioner, and he was to complete his hat-trick in the



King

RUGBY BY PETER ROBBINS

Lancashire fluid and confident

LANCASHIRE SWEPT aside Middlesex in the County Championship match on Saturday, after an exciting and entertaining first 60 minutes, the game deteriorated into a farago of error.

Lancashire scored a splendid try first minutes before half-time after besting Middlesex's line. It was made by Gullick's quick strike inside to Lyon.

It was made by Gullick's quick strike inside to Lyon. Gullick converted and also made the next try for Briers on the right.

When Middlesex did with their possession in the closing stages, Lancashire were able to draw on their team discipline and Horton was magnificent in his defensive kicking.

MPs to urge tax relief for sport in Budget

MR. ROY HUGHES, MP, chairman of the all-party Parliamentary Sports Group, and Mr. Hector Munro, MP, the Conservative spokesman on sport, are to meet Mr. Joel Barnett, Chief Secretary to the Treasury, tomorrow to discuss the financial predicament of sport and ask that it be favourably treated in the Budget.

Flash Imp should sneak in

THE WITHDRAWAL of Beacon from today's National Spirit Challenge Trophy has taken some of the interest away from Fontwell's most important two-mile one-furlong race.

RACING BY DOMINIC WIGAN

TV/Radio

- Indicates programme in black and white
BBC 1
6.40-7.55 a.m. Open University
11.00-11.15 a.m. News
1.00-1.15 p.m. News
2.01 For Schools, Colleges, 3.15 Songs of Praise, 3.55 Regional News (except London), 3.58 Play School, 4.20 It's the Wolf, 4.25 Jackanory, 4.40 Blue Peter, 5.05 John Craven's Newsworld, 5.15 It's Our Turn! 5.25 Paddington, 5.40 News, 5.55 Nationwide (London and South-East only), 6.20 Nationwide, 6.50 Ask The Family, 7.15 Poldark, 7.30-7.45 News, 8.10 Panorama, 9.00 News.

F.T. CROSSWORD PUZZLE No. 3317

Crossword puzzle grid with numbers 1-25 and 1-25.

- ACROSS
1 Dye for the comparatively insane (6)
4 Winds of change (6)
5 Gad about—possibly to parties (7)
9 'She must...' the everlasting sea' (Wordsworth) (7)
11 A method of stalking a bird before the storm (10)
12 The shape in which cricketers should be found (4)
13 The dog shows the heart of a Roman soldier (5)
14 A strange pass about the college carries (8)
15 To be the basis for what is less than prevarication (8)
18 It is thoroughly understood and recorded (5)
20 Dad includes the right support (4)
21 Tortuous like (10)
22 Came to nothing with sailor or ex-premier in evidence (7)
24 Cherts to the army unit—but still goes up (7)
25 'Then come kiss me sweet and...' (T.N.) (6)
DOWN
1 The girl follows Mr. French with song (5)
2 Vessel for an aimless person (7)
3 The Latin sees in a different light what is indispensable (10)
5 This Charlotte is really sweet (8)
6 A mistfit from Rugby (4-3)
7 Roundings up in soiled surroundings (9)
10 The fruit of disapproval (9)
12 The middle piece can be bog (6-3)
13 In the attempt they are found referring to proverbial expression (2, 4, 3)
17 Some in the river can be oblivious (2, 5)
19 One in profound suffering (7)
21 Exhausted writer in the street (5)
22 How low can you be (5)

TV/Radio

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BY JAMES... Liant... distinguished



Joseph O'Connor and Jack Walters.

erman, Cardiff King Lear by MICHAEL COVENEY

entiff calling itself the Drama Company should expect comparisons with the largest in the land... However, compelled by the city of this production to do any reference to the final, RSC, Edinburgh or Dublin Abbey... The truth of the matter is that both recall sitting so increasingly at a Shakespeare play changing upon an unfortuna-

The Entertainment guide is on Page 28 over the last three steps... In a similar vein, the play is being pushed out on a trip in every speech and in every scene... The difference of the costumes and the man "as though assess-

Elizabeth Hall William Byrd Choir by RONALD CRICHTON

Twa of the greatest 16th-century composers shared the honours of Saturday evening's concert: the Englishman who has given his name to Gavin Turner's accomplished choir, and his contemporary, the Spaniard, Victoria, who spent much of his working life in Rome. Byrd represented Latin motets and the Catholic side of his dual existence. If we had heard as well some of his Anglican Church music and secular works, his versatility would have been more apparent. The five-part motet of the deliberately restricted intensity of Victoria. As it was, two powerful, contrasted personalities emerged clearly.

Latin being less pliable than his native English, Byrd had less opportunity in these motets to display his extraordinary gift for making words lie along a musical phrase as if the two had been born together—not only ensuring that sense comes through but clarifying the part-writing. Latin words received more emphatic pointing; the concluding pages of Christus factus est become a kind of fantasia on the words "Jerusalem desolata est" in which syllables and notes seem inseparable. The monumental, lapidary qualities of Latin did not rob Byrd of his subtlety. The five-part writing in O quam gloriosum is as free and quick-nerved as a Mazurka; Saturday's performance of this motet with its pendant "Benedictus et Credo" drew applause in the middle of a group, and understandably so.

Byrd's music, second nature to these singers, sounded perfectly well in the Elizabeth Hall, better in fact than Victoria's, whose as well as polyphony there is harmonic chord-writing ideally suited to a large choir. Or is it that more a sentimental desire for the quality known vaguely as "mystical", an occasional patina which does not necessarily deserve the compliment of more than a faint glow in the 18th-century Russian opera? While the choir effortlessly found the right weight for Byrd, in Victoria (a generous selection including a Magnificat and a Mass (Vidi speciosam) as well as several motets) there was

Elizabeth Hall English Chamber Orchestra The English Chamber Orchestra, which span the last century's concert of Haydn and nine years of Mozart's life—is for Mozart on Friday was conducted by Murray Perahia. It was an exhilarating evening. Perahia has clearly established a warm and confident rapport with the orchestra, responding quickly and easily to the textual twists and sudden dynamic turns of Haydn's D major symphony no. 6 ("Le Matin"), and with enthusiasm to Perahia's vigorous tempo—a fresh, gay performance, with plenty of spring to its rhythms. In the second movement the solo violin remained largely in the background, often barely rising above the orchestral texture; an unusual (possibly unintentional) but beautiful effect.

The rest of the programme was devoted to two contrasting Mozart piano concertos. K415 in E—the first of the 17 Vienna concertos, which span the last century's concert of Haydn and nine years of Mozart's life—is for Mozart on Friday was conducted by Murray Perahia. It was an exhilarating evening. Perahia has clearly established a warm and confident rapport with the orchestra, responding quickly and easily to the textual twists and sudden dynamic turns of Haydn's D major symphony no. 6 ("Le Matin"), and with enthusiasm to Perahia's vigorous tempo—a fresh, gay performance, with plenty of spring to its rhythms. In the second movement the solo violin remained largely in the background, often barely rising above the orchestral texture; an unusual (possibly unintentional) but beautiful effect.

New Victoria Manhattan Transfer by ANTONY THORNCROFT

It is a depressing indictment of the black groups. The same energy prompts a succession of changes in the scene. After a slinky night club number, Tim Hauser appears bearded and holding, interpreting a black DJ, stanced to the pavement, and introducing Alan Punt as a Byrd-reminded follower of Elvis, unsmiling first his black leathers and then his white T-shirt. Then it is all Latin Vira and pass the tequila.

The attraction is the songs, standards and rarities from the cocktail bars of 30 years ago. up to "doo-wah, doo-wah" ballads of the teen ward of the fifties, combined with the enthusiastic energy of the performers. Although Manhattan Transfer has a hit to play at the moment, the group in action is much more impressive than the close harmonies of the recording.

Festival Hall London Philharmonic by DAVID MURRAY

The London Philharmonic was in cracking form on Thursday for Sir Georg Solti. In a programme of Richard Strauss' two operas in the original Italian order, curiously, the last two pieces, or, of course, quoted in Heidenleben among The Hero's Works of Peace, and it was odd to hear the selections and the proud retrospective thoughts, but as trailers for the second half of the concert. It may have created some harmless confusion among novices in the audience, for as an often the orchestra were not in the Festival Hall is full—the supply of programmes was inadequate to the demand.

Standstill for the arts

Hope of any early increase in the Government's subvention of the arts was fended off by Lord Donaldson, the Minister for the Arts, in a Press conference last Friday to discuss the Government's White Paper. On the other hand, fears that the arts might suffer a cut alongside other services were laid to rest at least until the year 1980-81, in so far as the present Government can accept responsibility so far ahead.

The figures forecast by the DES, which are the component for England—the Minister's responsibility, though it includes the whole of the Arts Council grants—1976-77 £40.5m. 1977-78 £40.5m. 1978-79 £40.5m. 1979-80 £40.5m. 1980-81 £40.5m.

Royal Court Devil's Island

"Devil's Island" is of course to emigrate to some tropical Great Britain, as seen in the paradise and preserve the oblique view through the spy-glasses of Tony Bicart. In one against the temptation of profit-glass at Tony Bicart, long set we get three somewhat selective views of it, in 1937, in 1977 and in 1997. They become, oddly enough, less appalling with the passage of the decades.

In 1937, Hugh Philip Dooghy is back from the Spanish Civil War, hindered by a grenade. He has been fighting with an Anarchist battalion, but fails to respond when Kutchevski, a Russian agent (Simon Callow), seeks to control him in propaganda, for the Communists quarrelled with the Anarchists in Spain as recently as the Loyalists' English society, meanwhile, represented by Betty, a wealthy land-owning lady (Gillian Barbot), a married couple, Bill and Sue (David Rintoul and Jane Wandi), and Sue's Leffish sister Jill (Suzanne Bertish), play at culture, play the nation slides ineffectively towards the war.

St. John's, Smith Square Schola Cantorum of Oxford

Robert Sherlaw Johnson's lines exposed the relative light Resurrection of Fen-Huang, promised for Thursday's choral concert, failed to materialise, and the scheduled Walton work, the recent Comico del sole, was replaced by "Where does the uttered music go?" The faro, as a whole, was safe and easily palatable; yet, setting the text of Schumann here—was the general flexibility as consolation, the evening was never in the least dull. Just now the bloom of this excellent Oxford choral group, led by Nicholas Williams as the Vaughan Williams of 1951 was often not in evidence with care.

Stratford Ontario 25th season

Previews and schools performance apart, the 25th season of the Stratford Festival will begin on June 6. There will be seven openings in June—A Midsummer Night's Dream, All's Well that Ends Well and Richard III at the Festival Stage, and Romeo and Juliet, Ibsen's Ghosts, Strindberg's Miss Julie and Molnar's The Guardsman at the Avon Stage. Noel Coward's Hoy Feyer, and the new play, Richard III, The Guardsman and As You Like It.

SEE PORSCHE'S NEW PORSCHE the 924 ON PAGE 25

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Borg-Warner Corporation has issued 2,000,000 shares of Common Stock to Robert Bosch GmbH The undersigned served as financial advisor to Borg-Warner Corporation. Warburg Paribas Becker Inc. February, 1977

OVERSEAS NEWS

Sadat reveals purchase of 50 Soviet MiG jets

By JUREK MARTIN, U.S. EDITOR

PRESIDENT ANWAR SADAT of Egypt disclosed today that his country either had, or was about to, take delivery of 50 Russian MiG 21 jet fighters. In an interview on American television recorded last week, President Sadat implied that he had waited at least two years for the Soviet Union to respond to his request for the aircraft and had been advised only on the previous day that the aircraft were arriving. Noting that the U.S. continued to refuse to sell arms to Egypt, President Sadat declared that he had to diversify the sources of his arms supplies. He said he was willing to go to other markets—in East or West Europe or from the non-aligned countries. At the same time, he was careful to point out that Egypt's relations with the Soviet Union are still "highly strained." He said that he had himself made the Russians "furious" by his insistence that only the U.S. could bring about a Middle East peace settlement, in spite of the fact that the Soviet Union is a co-chairman of the Geneva Conference.

WASHINGTON, Feb. 27.

Perhaps in deference to President Carter's known distaste for the international arms trade, the Egyptian President also said he was willing "to see something done about the level of armaments in the area." If a Middle East settlement could be worked out, he praised Mr. Carter's "great statesmanship" for his refusal to sell the highly destructive "concession" bombs to Israel. Mr. Sadat remained optimistic that a settlement was possible. He expressed satisfaction that Israeli political uncertainty had been cleared up by Mr. Yitzhak Rabin's winning his party leadership battle and said that Mr. Yasser Arafat, chairman of the Palestine Liberation Organisation, had agreed, in talks in Cairo last week with the Egyptian Foreign Minister, Ismail Fahmy, that there should be some form of link between the Palestinians and Jordan. Earlier, however, in another television interview, Mr. Cyrus Vance, the U.S. Secretary of State, had stressed that "a long and difficult" road towards a settlement. He pointed out, for example, that as long as the FLO

Ginzburg faces serious charge

By David Satter

MOSCOW, Feb. 27.

IMPRISONED dissident Alexander Ginzburg will be charged with anti-Soviet agitation, which carries a possible sentence of up to ten years in prison, according to Anatoly Shebaransky, a Jewish activist and friend of Mr. Ginzburg. Mr. Shebaransky told western correspondents that a search or Mr. Ginzburg's apartment in Tarnopol, about 75 miles south of Moscow, was authorised in connection with an investigation into charges of anti-Soviet agitation; an apparent indication that Mr. Ginzburg will face political rather than criminal charges. Mr. Ginzburg was a member of the unofficial dissident committee to monitor Soviet observance of the Helsinki accords and administrator of a fund to aid political prisoners. He was accused in the Soviet press of trading in foreign currency and it had been expected that he would be charged with some form of economic crime. Mr. Shebaransky also said that Mikhail Shtern, a Jewish doctor sentenced to eight years in a prison camp after his two sons applied to emigrate to Israel, has been placed in a punishment cell. This is very dangerous because of his health and age, Shebaransky said. Shtern, who practised in the Ukraine, is 58 and said to suffer from heart and spine disorders. Mr. Shebaransky said Shtern was being disciplined for sending a letter with information about conditions in his prison camp. His wife Ida, who has moved to Kharkov to be near the camp, has begun a hunger strike to protest the move. Shebaransky said.

Kissinger may have made secret Taiwan agreement

BY OUR OWN CORRESPONDENT

WASHINGTON, Feb. 27.

DR. HENRY KISSINGER, the former U.S. Secretary of State, may have concluded an agreement with the late Mao-Tse-tung which committed the U.S. to sever relations with Taiwan. Mr. Cyrus Vance, Dr. Kissinger's successor, did not deny the possibility that such an agreement may have been made and that the Carter Administration is ignorant of its contents when questioned on American television today. The secret agreement was reported to have been struck in 1972 by Dr. Kissinger and President Nixon. Mr. Kraft reported that Mr. Carter replied he was unaware of any secret clauses to the Shanghai communique and ordered a hunt through the missing pieces had not been found. If there are any papers or by reducing the American troop contingent on the island.

Mr. Vance also went to such great lengths to praise the operation Dr. Kissinger had provided the transition team and to the volume of paperwork the new administration was still grappling with that he left the impression that something might indeed be missing. There is no special reason to suppose that the People's Republic will try to exert immediate pressure on the Carter administration to break off relations with Taiwan. How China had suggested to the U.S. that the two countries might begin bilateral talks on normalised financial claims. In return, the U.S. might signal its goodwill by letting the Ambassadorship in Taiwan fall vacant or by reducing the American troop contingent on the island.

Spanish farmers' protest spreads

By Roger Matthews

MADRID, Feb. 27.

MORE THAN 14,000 tractors were parked on main roads in Northern Spain today as protest by farmers against Government guaranteed prices for their produce gathered strength and showed signs of spreading to other regions. The protest movement appeared to have been largely spontaneous, sparked off by the low prices for this year's potato crop, but bringing forth the accumulated resentment of the past decade during which investment in living standards in industrial zones for outstripped those in rural areas. The farmers began to pose a serious problem for the regime in the run to general elections. Concessions to the farm would almost immediately raise the consumer price index until the Government is willing to more strain on the already stretched central budget by paying increased subsidies. The present rise in petrol prices which took effect yesterday, combined with steeper rises in so industrial fuels, will also add inflation currently more than 10 per cent. Farmers' mass meetings in the north this week-end to support demands for an interview with Sen. Adolfo Suarez, the Prime Minister. Protests were also held in week-end in the southern region of Andalusia, where agricultural income levels and unemployment are more serious than in the relatively better central northern region. Despite a Government plea to consider introducing a more generous political amnesty, both major industries in Basque provinces.

Israeli army ousts settlers from West Bank site

BY OUR OWN CORRESPONDENT

MASHA (WEST BANK), Feb. 27.

AN ATTEMPT by 40 members of the Gush Emunim movement to establish a settlement without Government permission at this abandoned West Bank police station, some eight kilometres east of the former Israel-Jordan border, ended at lunch-time today when the army ordered the settlers to leave the site. Early this morning Gush Emunim's west Shomron group moved on to the site with truckloads of building materials. They immediately started repairing the old police station and preparing it for occupation by ten families. The military authorities surrounded the site, but did not interfere with early work. Close to noon four helicopters loaded with soldiers landed at the site, and the military commander ordered the settlers on the eve of the rally.

Strong Singapore recovery

BY OUR OWN CORRESPONDENT

SINGAPORE, Feb. 27.

SINGAPORE'S economy improved markedly in 1976, the gross domestic product showing a real growth of 7 per cent, compared with 4 per cent in 1975, according to the Finance Ministry's pre-budget survey of the economy. Mr. Hon Sui Sen, the Finance Minister, will present his budget to Parliament tomorrow. At current factor cost, the GDP expanded by 9.6 per cent over 1975 to S\$13.8bn while the Gross National Product grew by 9 per cent to S\$14.4bn. Singapore's external payments remained in surplus. Capital inflows helped boost the balance of payments to a S\$700m surplus which, in turn, boosted the Republic's foreign exchange reserves by 10 per cent to S\$8.2bn at the end of 1976. Total external trade which declined by 7 per cent in 1975 recovered strongly, growing by 21 per cent to S\$38.7bn. As a result of a more rapid expansion in exports, Singapore's traditional trade deficit narrowed slightly to S\$6.1bn. The Republic's major trading partners continued to be Malaysia, the U.S., Japan, Saudi Arabia, Hong Kong and the EEC. The battle against inflation appears to have been won — the consumer price index dropped 2 per cent in 1976 after having risen by 3 per cent in 1975. The manufacturing sector again led the economy's share of the GDP rising to 29 per cent from 28 per cent in 1975. This reflected improved demand by the industrialised countries, particularly in the electrical and electronics industry and the petroleum refining industry. Both major industries in Singapore.

Lebanon considers UN troops

BY HSIAN HIJAZI

BEIRUT, Feb. 27.

THE LEBANESE Government is reported to be considering a proposal for stationing United Nations forces in south Lebanon near the border with Israel in an effort to check the heightening tension there. The proposal was first made by former President Camille Chamoun, the leader of the National Liberal Party, to President Elias Sarkis. Mr. Chamoun is expected to make the proposal public soon on behalf of the right-wing Lebanese Front while groups with other prominent Christian leaders, notably Mr. Pierre Gemayel, the head of the Phalange Party, and ex-President Suleiman Frangieh. Mr. Chamoun was reported to have proposed complete disarmament of rival factions in the south along with stationing of UN troops there. In the past ten days, right-wing forces of the Lebanese Front have been on the offensive in the border area against Palestinian commandos and their Lebanese left-wing allies. The Front were reported to be pressing for the occupation of Bint Jebel, a main town about six miles from the Israeli border. The town is under the control of the Palestinian and anti-left-wing forces. With thousands of displaced persons, victims of the recent civil war, still waiting to be repatriated to their original homes, the south has become an urgent issue. President Sarkis intends to consult with other Arab heads of state before taking a decision on inviting UN forces to Lebanon. Arab leaders are scheduled to gather in Cairo on March 7 for the Afro-Arab summit conference. Mr. Sarkis met for three hours on Friday night with Mr. Yasser Arafat, chairman of the Palestine Liberation Organisation, to talk over the Southern Lebanon. Strong Israeli warnings have so far prevented Mr. Sarkis from dispatching Syrian troops of the Arab peace-keeping force to the south. Our Tel-Aviv correspondent reports: Israel is unenthusiastic about the proposal to invite the UN to send a police force to the Lebanon-Israel border. Official claims here were also sceptical about reports the PLO has agreed to withdraw its forces from the southern Lebanese region bordering Israel. The Israeli army spokesman claimed at the weekend that there were now 3,500 Palestinian fighters in the region. Officially in Jerusalem said that the problem of southern Lebanon is an internal Lebanese problem and the Lebanese must assert their authority there, rather than relying on the UN.

What everyone who uses a telephone would

"Mr. Watson, come here, I want you." Alexander Graham Bell's words on 10th March 1876 were the first complete sentence transmitted over the electric telephone. Standard Telephones and Cables Limited - STC - has been in the forefront of the development of telecommunications over the following hundred years. This survey portrays the background history and begins to indicate the future.

STC crossed the frontier of the undersea world of hydrospace more than a hundred years ago, when one of the company's forebears provided the first transatlantic cable laid from Brunel's famous ship Great Eastern. In the following years STC has supplied enough submarine cable to encircle the earth three times. Thought was that satellites would halt the growth of undersea transmission systems. But in the first five years after the launch of Early Bird, cable circuit miles trebled. As growth continues, it's not a question of cable or satellite; but of cable and satellite. Increase in route-mileage is only part of it. STC repeaters, amplifying the signal several

Advertisement for STC underwater repeaters. Includes text: 'STC underwater repeaters improve signal strength and purity... and operate for over 20 years without attention...' and 'STC and the subscriber. Last year the world's 400 millionth telephone installation was made. For any one of these to speak to another, the ability to establish up to 80,000,000,000 million different connections is needed...' Includes images of a submarine and a person using a telephone.

COMPANY SAINT GOBAIN PONT-A-MOUSSON. Joint-Stock Company with a capital of FF 2,970,000,000. Registered office: 54, Avenue Hoche - PARIS 8ème. Trade Register: PARIS B 542 039 532. SECOND NOTICE TO DEBENTURE HOLDERS 10% 1975/1980 OF FF 5,000. The general ordinary meeting of holders of debentures 10% 1975/1980 of FF 5,000 issued in 1975, making the international loan of the COMPANY SAINT-GOBAIN PONT-A-MOUSSON of FF 100,000,000, created with coupon dated 10 November 1975, convoked on Friday 18 February 1977, could not deliberate for lack of quorum, therefore Messrs. the debenture-holders are again convoked by the Board of Directors of the said Company for a general ordinary meeting, conformably to the law of the 24 July, 1966 and to the decree of the 23 March 1967 on the Commercial Companies, on March 11, 1977 at 3 p.m. in one room of the house, 8, rue de Sofia, in PARIS (18ème), in order to deliberate on the same agenda, hereafter reproduced: AGENDA. -Appointment of the representatives of debentureholders; Fixing of their powers and their remuneration. To attend the meeting or to be represented, the debenture-holders will have to deposit their stocks at least five days before the date fixed for the meeting, in safes of banks or credit establishments, having participated in the selling of these debentures and in which proxies are at the debenture-holders' disposal who will ask for them. The deposits effected and the proxies given with a view to the meeting of the 18 February 1977, remain available for the meeting convoked at present. The Board of Directors.

Advertisement for STC optical fibre. Includes text: 'A miniaturised laser... produces a beam of light... which passes along hair-fine optical fibre so transparent that a half-mile-thick window made of it would be as clear as glass.' Includes images of a hand holding a fibre, a laser, and a person using a telephone.

WORLD TRADE NEWS

U.K. takes 80% of Norwegian exports.

Financial Times Reporter... U.K. absorbed nearly 30 per cent of Norway's total exports in 1976...

Agricultural sales up 17%

Financial Times Reporter... U.K. EXPORTED £1.52bn of livestock, agricultural machinery and equipment...

JAPAN'S EXPORT DIPLOMACY Talking one game... playing another

By DOUGLAS RAMSEY

THE CONCLUDING chapter of JETRO's latest monthly magazine... suggests on how to break into the Japanese market...

Vocal

Moreover, JETRO already operates 25 offices jointly with private industry, and is adding four new ones to the list in 1977...

TOKYO, Feb. 27.

But the advantage of the bank, aided by JETRO, is that it can respond quickly to any major increase in overseas demand for buyer credit...

Confidence

Obviously, Japan's decision to separate its diplomatic from its trade missions overseas has borne fruit, and it is a telling observation that Japan carried the (originally) British concept of a foreign trade organisation to its logical conclusion...

Hungarian currency proposals

By David Lascelles

A LEADING Comecon banker has called for a new world money system based on gold in which both Communist and non-Communist countries could participate...

Prices may fall

Financial Times Reporter

BRITISH imports from Portugal which could fall in price as a result of the 15 per cent devaluation of the escudo...



South Korean car challenge

By TERRY DODSWORTH, MOTOR INDUSTRY CORRESPONDENT

A NEW Far Eastern challenge to the European car manufacturers will be launched next month by Hyundai Motor, the South Korean company which has been established over the past three years...

Since Hyundai has already begun exporting to Africa, some Central and South American markets, as well as the Arab world, its cars are spread very thinly at present.

Sharp fall in oil demand this year

By OUR FOREIGN STAFF

The rise in demand for oil experienced by the Organisation of Petroleum Exporting Countries (OPEC) towards the

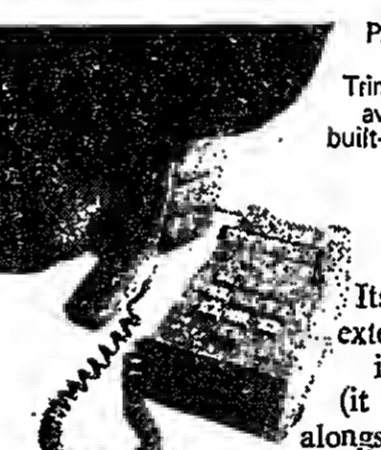
end of last year fell sharply in January. With the end of stockpiling for a price rise of 10 per cent before the increase on January 1, OPEC output fell by almost 20 per cent from January 1976.

You should know about telecommunications



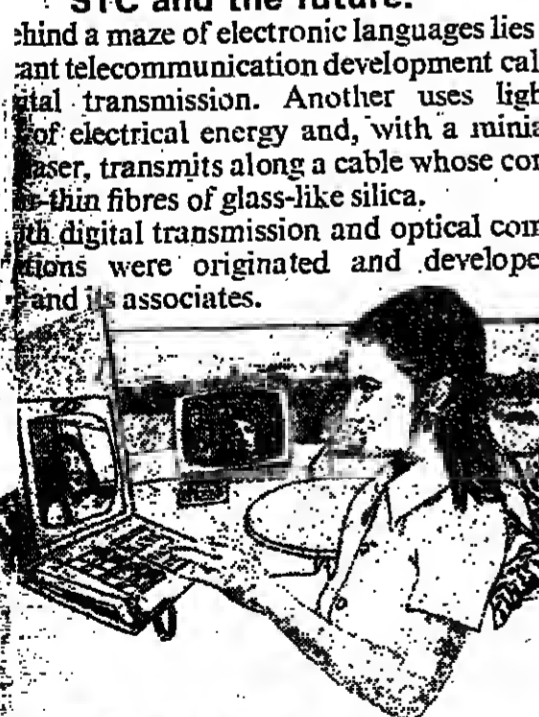
Field trials of STC's innovative digital communications were so successful the Post Office has ordered trunk network systems.

The first concept for digital communications, known as pulse code modulation, was conceived in 1938 by an STC scientist.

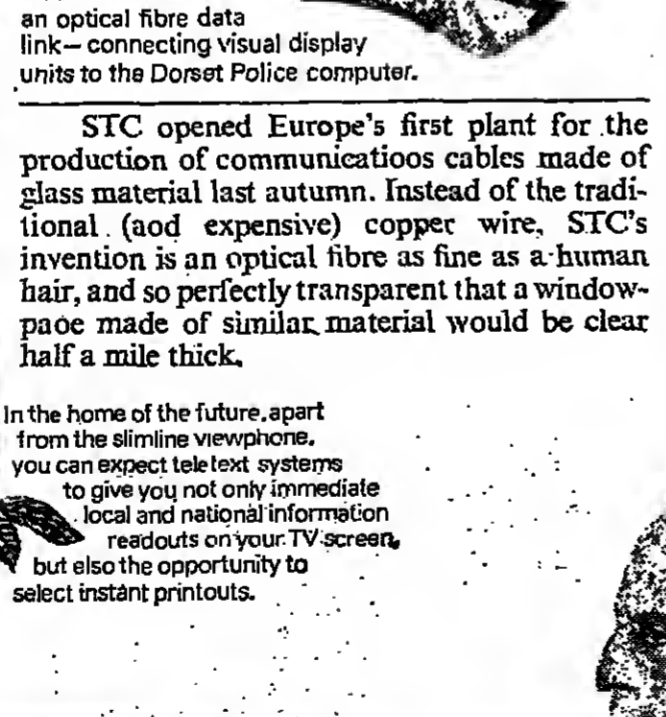


Pressbutton versions of the popular Trimphone are already available. Models with built-in memory and with loudspeaker facility increase versatility.

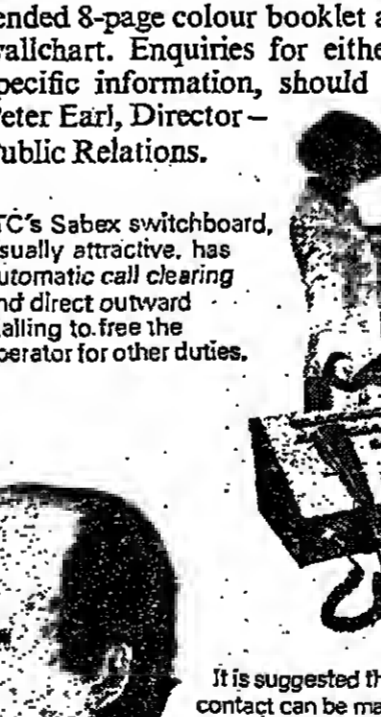
Its immunity from external interference is one advantage (it could be strung alongside power cables or electric railway lines).



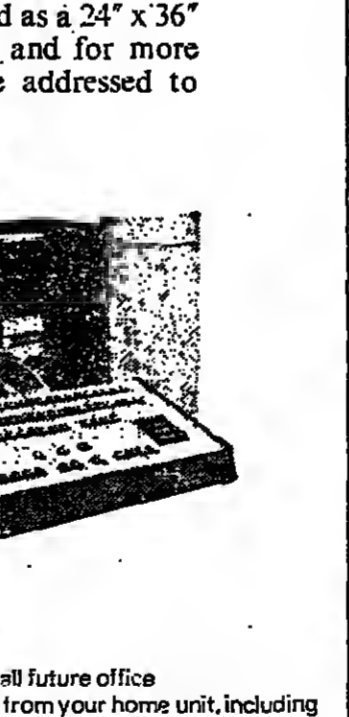
STC and the future. Behind a maze of electronic languages lies a silent telecommunication development called digital transmission.



In the home of the future, apart from the slimline viewphone, you can expect teletext systems to give you not only immediate local and national information readouts on your TV screen...



It is suggested that all future office contact can be made from your home unit, including pressbutton secretarial services and easy availability of intercontinental screened conferences.



STC's Sabex switchboard, visually attractive, has automatic call clearing and direct outward dialling to free the operator for other duties.

Standard Telephones and Cables Limited

A British Company of I.C.T. Dept 810B STC House 190 Strand London WC2R 1DU Telephone: 01-836 8055, Telex: 22385

India sets export target

INDIA PLANS to export 2m tonnes of coal during 1977-78. The same target was set in 1976-77 but port bottlenecks prevented it being reached.

World Economic Indicators

Table with columns for Industrial Production (1970=100) for various countries (U.S., U.K., Holland, Germany, Italy, France, Belgium, Japan) across different months.

GROUPEMENT DE L'INDUSTRIE SIDERURGIQUE G.L.S.

A company with a fully paid share capital of 400,000,000 French Francs. Head Office: 5 bis, rue de Madrid à PARIS (FRANCE).

Building and Civil Engineering

£23m. Saudi Arabia project

BRITISH consultants have been engaged to carry out a major development study covering a large part of Saudi Arabia. Cost of the study, including sub-contracts, will be about £23m.

The contract is between the Saudi Ministry of Agriculture, and Water and Groundwater Development Consultants (International), a company formed jointly by Hunting Technical Services and Sir M. MacDonald and Partners.

The assignment is expected to take 3½ years to complete and will involve over 50 expatriate specialist staff plus a further similar number in sub-contract activities and some 37 additional staff in administrative and supporting roles.

Object of the task, to be known as the Umm er Radhuma study, is to evaluate the water resources potential for development of irrigated agriculture throughout the Eastern Region of the Kingdom, an area of 350,000 square kilometres (135,000 square miles) which is larger than the land area of the British Isles, including the Irish Republic.

The existence of sub-surface water (groundwater) is the key to the development of this arid area where rainfall is almost non-existent and where temperatures can exceed 40 degrees C. Substantial quantities of water are known to be held in a thick belt of limestone (the Umm er Radhuma aquifer) which underlies the region and the determination of quantity and quality of the water which can be extracted from it will be one of the main aspects of the study.

At the same time as the groundwater sources are being studied, the land resource evaluation will be carried out which will cover the properties of the soils of the area and their ability to support irrigated agriculture. The studies will initially range over the whole 350,000 square km. project area from which some 13,000 sq. km. will be selected for closer study leading later to development projects totalling about 500 sq. km. which will receive more detailed investigation and planning studies. This will be followed by the preparation of designs and tender documents for consortium contracts.

Once it is clear where agricultural development is most promising the consultants will plan two 100 hectare (250 acre) pilot farms for testing various methods of agricultural production.

Moorings for supply boats

THE FIRST major order to be won since the recent formation of Press Imodoc Offshore Terminals by William Press and Imodoc Inc. is for supply boat moorings systems to be used in Chevron Petroleum's Ninian Field developments.

The contract is worth £1m. and is for four of the moorings each of which is designed for a maximum force of 180 tons and comprises a ballasted base having a chain riser linked with the mooring buoy.

Fabrication will be at the Howdon Yard of William Press on Tyneside.

Three jobs for Wimpey Breweries

A £3.4m. shopping complex for Federated Homes at Hempstead Valley, Gillingham, Kent is to be built by Wimpey.

This contract is part of a plan for comprehensive development of the Hempstead Valley area where Wimpey is building the first phase of a big private housing scheme, the Beechwood Estate. Architects are Stanley Bragg and Associates.

Across the border, in Surrey, Wimpey has won another contract for the construction of an agricultural research facility at Windlesham, Surrey. Value of this is £1m.

Situated at Eri Wood Manor, the project comprises a rectangular brick and steel building 47 metres by 23 metres by 12 metres (high) with a steel roof and two first floor plant rooms and external services, roads and paths. Architects are Morgan, Branch, Roberts.

A third job for Wimpey is a three-storey office building with a central courtyard at the junction of Headstone Drive and Rokeby Road, Harrow, for Kodak.

The building has been designed by G. G. Knight, chief architect at Kodak and the contract is valued at £767,000.



Keeping the Thames on course

WESTMINSTER Dredging Company has been awarded another contract—worth more than £1m.—to continue its work in strengthening tidal defences along the River Thames.

The latest contract, awarded by the Southern Water Authority, is for the construction of a 2.2 km long permeable head end clay cut-off from Shire Meadow to Higham, Kent.

The company, a member of Bos Kells Westminster Group, already involved in similar work along a two-kilometre stretch of Gravesend Island Hospital to Shoreham Road. The contracts are both part of a scheme to strengthen the defences along a 40 km stretch from Dartford Creek North Grain.

New concrete vibrators

TWO NEW models have been added to the CEL Drum series of vibrating concrete equipment—a double-poker, diesel-powered version, said to increase productivity on suitable sites by about a third without any increase in fuel consumption; and a compact, electrically-powered unit for greater convenience, less noise and cleaner operation on sites where an AC mains supply is available.

The Drum Major vibrator unit, powered by a Petter AAL diesel, can run two of any of the CEL 25 to 60 mm pokers, each on a 6 metre flexible drive shaft. It is contained in a box-type, protective carrying frame with tubular steel handles. There are twin-claw couplings for the drive shafts.

The electrically powered Drum heat motor unit weighs 66 lbs, and produces 1½ hp on single or 2 hp on three-phase supply. It can drive pokers up to the 60mm size. There is a choice of square-end or twin-claw couplings.

Two awards to Tarmac

ABOUT £2m-WORTH of work on a new brewery complex, adjacent to the M4 at Reading is to be undertaken by Tarmac Construction.

John Laing Construction, management contractor employed by Courage Brewing, has awarded contracts to Tarmac, as subcontractors, for site works to the value of £1.2m. and sub-structure work worth £880,000.

The 35-week site work contract involves excavating, filling, culverts, drains and ducts, roads and hard standings while the sub-structure contract will involve pile caps, ground beams and ground slabs, stanchion bases and tank pads.

Minerals in the Yemen

COPPER, and heavy beach sands surveys as well as the collection of bulk samples of various types of beach sands from interesting deposits. General sampling will be continued in order to make a mineral search contract with the Yemen.

The company has set up laboratories at Mukalle and has trained Yemeni staff in the necessary techniques.

Homes for export

PERMANENT housing system called Hallmark developed for export markets and especially for the Middle East has just been introduced by Aquatic Building Systems (Paddock Wood), Kent Group company.

To be produced initially in the single-storey form, the homes will be available in four standard sizes ranging from 140 square metres (four bedrooms) to 58 square metres (one bedroom). They will be mainly of timber and steel construction to suit a wide range of local conditions.

A complete four-bedroom home ready for occupation will cost between £30,000 and £35,000, and a one-bedroom version between £20,000 and £25,000. Prices include furnishing and all fittings, but exclude preparation of local work forces.

Good start for new enterprise

A £1m. contract for alterations at the San Fernando premises of the Bank of Nova Scotia Trinidad and Tobago has been awarded Engineering Enterprises.

This latter is a newly formed joint venture company formed by Hill and Hill, Trinidad, and its partners in Trinidad, Head of is in Port of Spain.

Architects for the San Fernando job are Wath Phillips Wynne and Partners.

British Rail contract

MEARS Construction has won a £230,394 contract for the construction of a cleaning and servicing depot at Kirkdale, Liverpool, for British Rail.

The contract calls for a single storey shed, 133 by 20 by 9 metres high, with reinforced concrete foundations, in-situ concrete paving, steel frame, external brick walls and asbestos cement roof decking and vertical cladding.

Wharves in the Gulf

TWO CONTRACTS in the Gulf, each worth about £1m, have been awarded to Howard Algaeml Construction Company of Abu Dhabi, an associate of John Howard and Co. International.

One of the contracts has already been started and calls for the design and construction of a 300 metre wharf in connection with the development of Umm Al Qawain creek. The new wharf with a dredged depth of 7.5 metres, will be of sheet pile construction and involve excavation, paving and the provision of essential services.

The second contract was awarded by the Office of Military Works, Abu Dhabi and is for the construction of a sheet piled wharf 435 metres long to form an extension to the Naval Force jetty. Some dredging works is included together with paving and the provision of all the usual services.

Insulation panels

A LIGHTWEIGHT, easily-fitted insulation panel for use in new and existing industrial buildings, has been developed by Fibreglass St. Helens, Merseyside, WA10 3TR (0744 24622), a Pilkington Group company.

Called Factoryliner, it is an integral, rigid, stable Fibreglass Crown slab faced with white pre, and is specifically designed for use in under-purlin linings, suspended ceilings and sheeted walls.

It can be used in existing buildings which cannot bear the weight of a conventional lining system and gives a thermal performance up to 11 per cent better than conventional under-linings, claims the maker.

Big schemes to Barwick

THE GREATER part of the £1.1m. worth of jobs secured by R. J. Barwick and Sons of Dover is for a big new reception building to be constructed for the Dover Harbour Board at East Docks.

The £623,557 contract calls for a seven-storey building with a reinforced concrete frame and value of £438,368. It covers a reinforced concrete floors, roof and staircase. Foundations will be piled with reinforced concrete ground beams.

Floor area will be close on 20,000 square feet.

For the Royal British Legion Housing Association, Barwick is building sheltered housing for the elderly to a contract value of £185,185. It covers a reinforced concrete floors, roof and staircase. Foundations will be piled with reinforced concrete ground beams.

£2.8m. hotel extension in Bahrain

CEMENTATION International has won a contract worth £2.8m. to build a 110-bedroom extension to the Bahrain Hilton. Work will start in March.

The extension will comprise an 'L' shaped three-storey building to the south-east side of the existing building, with balconies overlooking the pool. This will increase capacity of the hotel to 840 rooms and suites. It will also provide a health club, sauna, complex as well as a new coffee shop.

A further extension in form of a seven-storey tower block to the south-west of the present hotel together with the provision of a lift, stairs and shopping arcade is now being negotiated and this will increase the capacity to 1,000 rooms and suites.

Speeds the fitting-out

BUILT-IN furniture for bedrooms in new or renovation housing schemes, hotels, hostels and old people's accommodation shows an increasing demand, which has encouraged Thames Plywood Manufacturers to introduce a range of fittings.

These consist of a standard range of units, supplied in knock-down form, which have considerable dimensional flexibility to suit most design situations, says the company. Units are available in white melamine finish or teak with a high-quality factory finish. Units can be produced to meet specifier requirements.

Installation is said to be simple and speedy—a service is provided by the maker in London and the Home Counties.

More from Thames Plywood Manufacturers, Harts Lane, Barking, Essex IG11 8NB (01-594 5511).

Factory and warehouse awards

NEW construction work worth over £700,000 is being undertaken by FPA Floecan, main building subsidiary of the FPA Construction Group.

The biggest job is a warehouse for Thorn Domestic Appliances at Stechford, Birmingham. Other projects include a 1,350 square metres factory unit at Roundhay Road, Leeds, for the English Industrial Estates Corporation and four factory units on two sites at Grimsby.

IN BRIEF

British Fairwall of Wembley, Middlesex, has obtained orders for the supply and installation of its Fairwall and Glidewall sliding walls at the Okoume Palace Hotel, Libreville, Gabon, The Royal Gardens Hotel, Tehran, The Holiday Inn, Islamabad, Pakistan and The Chicago Beach Hotel, Dubai. The contracts are worth over £100,000.

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The City has its ups and downs

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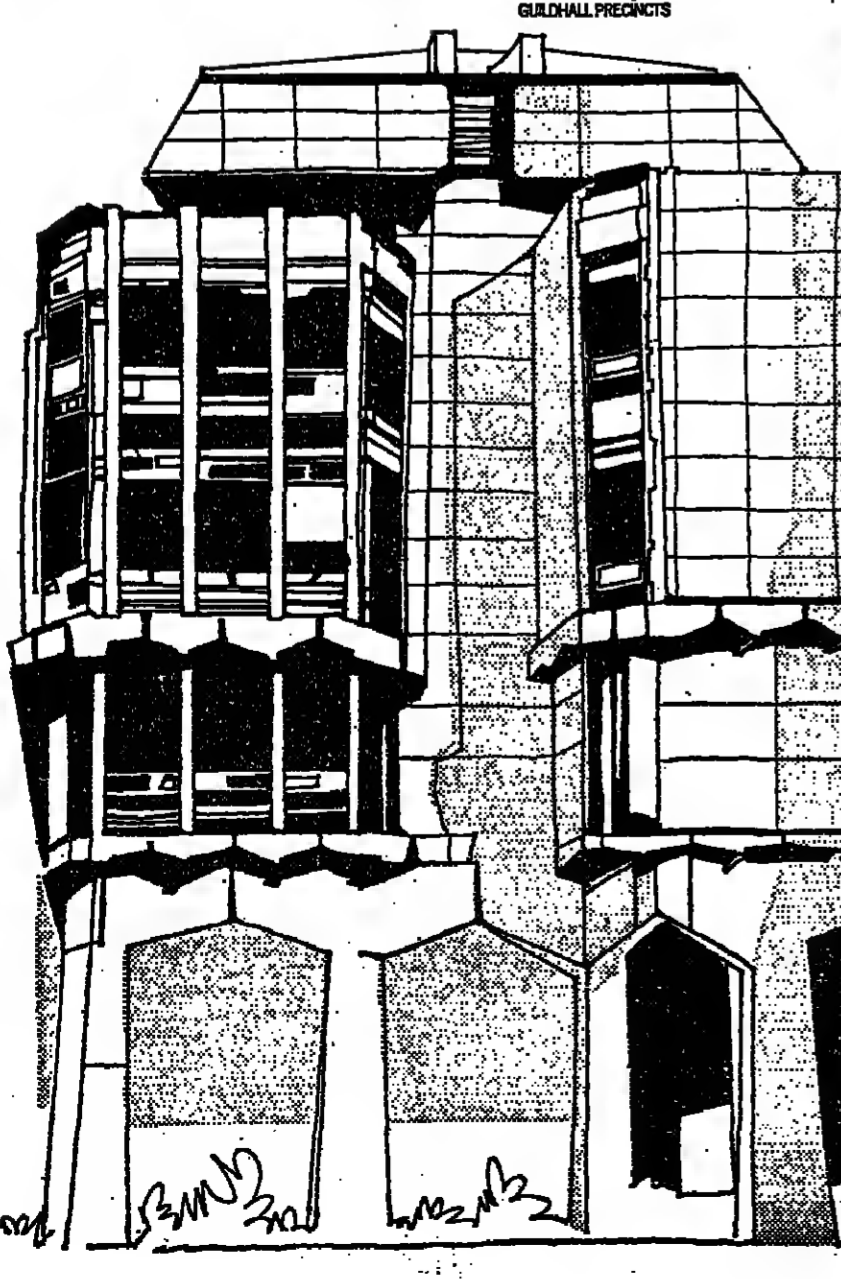
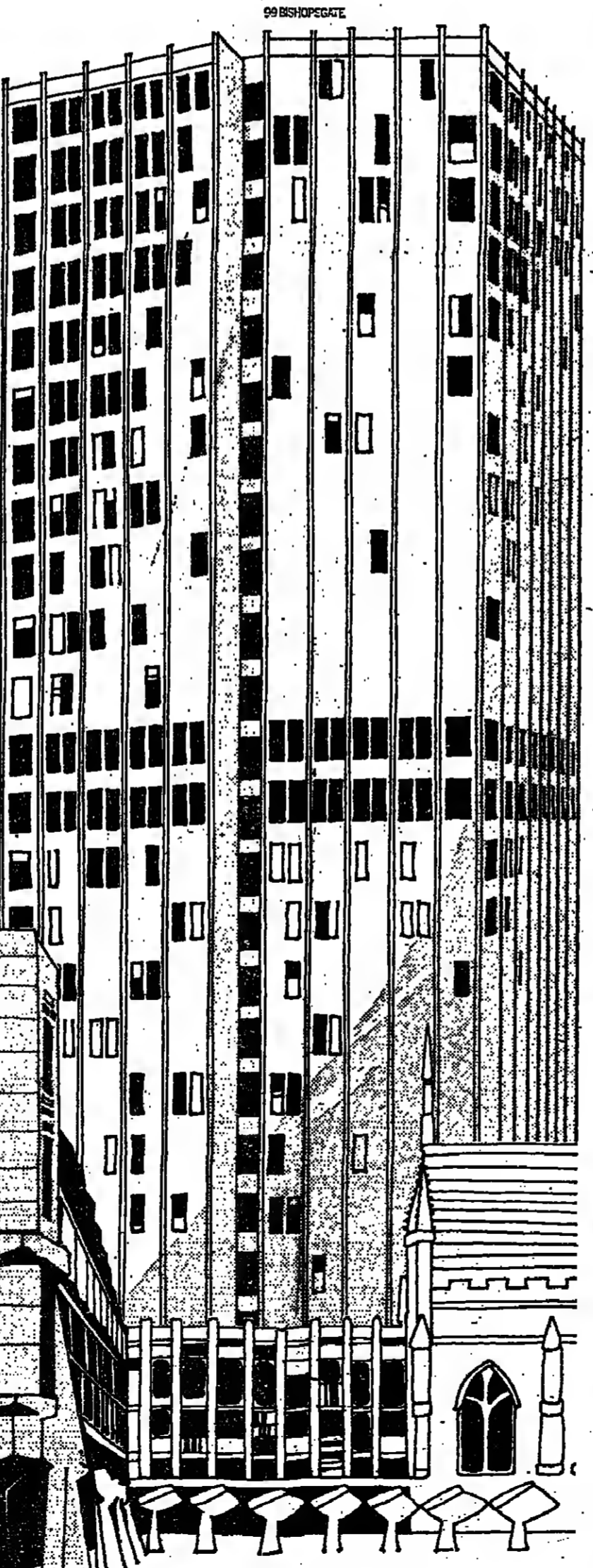
We not only built 99 Bishopsgate, and Alderman's Court, we restored the roof and crypt of Guildhall itself.

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مستلزمات العمل

HOME NEWS

Smoking controls sought by MP

BY STUART ALEXANDER
ROGER SIMS, Tory MP for... to introduce a private members Bill on Friday...

Under half the adult population... smoke and I have no wish to prevent those who enjoy a pipe or cigar from having one...

Mr. Sims said that the Bill did seek to ban smoking entirely in public places of entertainment... that some places were too small to be divided.

One national Co-op federation proposed

BY ELINOR GOODMAN, CONSUMER AFFAIRS CORRESPONDENT

THE FRAGMENTED structure of the Co-operative movement is preventing it from competing effectively with modern retail groups...

Wives buy fewer potatoes, less beef as prices rise

HOUSEWIVES bought less beef and potatoes last year because of inflation, writes Elinor Goodman.

Results of the National Food Survey on household consumption for the fourth quarter of last year show that average expenditure on food was 18.5 per cent up on the same period in 1975.

Levy threatens £8m. syrup plant

BY MICHAEL THOMPSON-NOEL

MOVES BY the European Commission in Brussels to impose a 550-tonne levy on the production of high fructose syrups from the rules of the Common Agricultural Policy...

of our pragmatic approach we have failed to frame a corporate strategy of advance. Such an approach was however essential. The concentration of ownership to British retailing...

egg consumption was down 10 per cent. Purchases of tea dropped sharply in the fourth quarter in the face of steep price rises.

Stuart Alexander writes: A fall of 1.8 per cent in U.K. food consumption this year is forecast today by Economic Models.

There was a further fall to 1.5 per cent in the fourth quarter. Although consumption of butter, margarine, cooking fats and cooking oils increased compared with the previous three months...

Price up for milk bottle tops

BY RHYS DAVID

THE BIG aluminium producers have raised the price at which they will buy aluminium household waste, mainly milk-bottle tops...

Secondary aluminium from scrap is about 40 per cent of total aluminium output and has the advantage of being less energy intensive in its production.

Regional Tories revolt over rates

By Stuart Alexander

A GRASS roots revolt by regional Tory leaders over the party's commitment to abolish the domestic rating system emerged at the weekend.

The ability to implement a widely acceptable alternative was called into question with some members pleading for more time to sift the information available.

Farmers face problems after fill-dyke February

BY JOHN CHERRINGTON, AGRICULTURE CORRESPONDENT

THE WIDESPREAD floods which have been the most spectacular upset of the wettest February for many years have receded with the week-end sunshine and cold dry weather.

If they do not recur farmers will not have been too seriously affected by the almost continuous rain since September.

There are areas where the potatoes have not all been lifted, a little sugar beet is still in the ground and a sizeable amount of winter wheat has not been sown.

Prentice direct labour warning

FINANCIAL TIMES REPORTER

DIRECT LABOUR building by local authorities should not be expanded when the construction industry is suffering from economic recession...

So crop failures will probably be replanted with barley. Many farmers were worried because their wheat was planted late and in poor condition last autumn...

Nitrogen can be applied at any time from now. But unless the soil dries out the tractors doing this could cause considerable damage.

Some farmers are already using aircraft to apply the fertiliser. If the wet weather should return there will be a considerable growth in demand for this service...

Important

Mr. Prentice hints he may be considering trying to block the Bill, by drawing an analogy to the Dock's Bill.

IMPALA PLATINUM LIMITED

(Incorporated in the Republic of South Africa)

DECLARATION OF DIVIDEND

The Directors have declared a second interim quarterly dividend of 10 cents, South African currency, per share (1975-76 cents). This will absorb R1,200,000.

INTERIM REPORT

The unaudited consolidated financial results for the six months ended 31st December, 1976, are as follows:

Table with 3 columns: Six months ended, Six months ended, Year ended. Rows include Profit for period after deduction of minority interest, Provision for taxation, Profit for period after taxation.

NOTES

1. In order that a comparison may be made of the profits earned during the six months to 31st December 1976 with the profits earned during the six months to 31st December 1975 the following must be taken into account:

(a) The cost of production attributable to platinum in the course of production from the concentrator onwards (i.e. the metallurgical pipeline) at 31st December 1976, is based on the current cost of production. It had a similar basis of accounting being applied at 31st December 1975, the profits for the six months ended on that date would have been increased by R1,888,000.

(b) As a result of the devaluation of the South African Rand by 17.9% on the 21st September, 1975, the profits of the company for the six months to 31st December 1975 were reduced by exchange losses on long and short term borrowings of R5,882,000.

2. In the directors' reports for the years ended 30th June 1975 and 1976 reference was made to the dispute between Colonial Metals, Inc. and Impala Platinum Limited. The case was heard before a jury in the Circuit Court of Cecil County, Maryland, U.S.A., and on Saturday, 18th February, 1977, judgement was given in favour of Colonial Metals, Inc. and damages amounting to U.S.\$2,102,372 were awarded against your company. The profits for the six months to 31st December, 1976 have been adjusted by a provision for this consent. However, in the light of advice from its attorneys to the U.S.A., Impala Platinum believes that it has good grounds for contesting this finding and award of damages and intends to do so.

3. The serious desertion of black labour following the rioting at the company's Witwatersrand Mine hostel during November 1976 will result in lost revenue and higher costs during the second half of the current financial year but the company will be able to meet its contractual commitments. Labour strength is now back in normal but has to be trained.

4. Group capital expenditure for the six months to 31st December 1976 amounted to R3,009,000 (1975-R3,068,000). Further approved expenditure at that date amounted to R19,258,000 (1975-R6,512,000).

MARKET. For the period under review the market for platinum and palladium improved from July through September, with higher prices prevailing for platinum. The platinum price weakened towards the year-end, while palladium prices improved slightly. Demand for platinum and palladium from the automobile industry continued at high levels throughout the latter part of 1976.

On 28th October, 1976 Impala reduced its producer price of platinum from \$170 (since 6th July, 1976) to \$163 per tray ounce.

Prices of nickel continued to weaken throughout the period under review and there are at present no signs of recovery.

DIVIDENDS PAID

The following dividends have been paid during the period covered by this report:

- 1. Final dividend for year to 30th June 1976 of 22 cents per share, absorbing R2,840,000 (1975-15 cents per share, absorbing R1,800,000).
- 2. First interim quarterly dividend of 20 cents per share, absorbing R2,400,000 (1975-15 cents per share, absorbing R1,500,000).

On behalf of the Board I. T. GREIG K. A. B. JACKSON Directors

London Secretaries Union Corporation (U.K.) Limited, Princes House, 95, Gresham Street, London, EC2V 7BS.

Registered Office Union Corporation Building, 74/78, Marshall Street, Johannesburg, 2001, (P.O. Box 61257, Marshalltown 2107).

25th February, 1977. A UNION CORPORATION GROUP COMPANY

Advertisement for Nilfisk vacuum cleaners, featuring an illustration of a vacuum cleaner and text describing its features and availability.

Advertisement for Eagle aircraft, featuring an illustration of an Eagle Super King Air 200 and text describing its performance and specifications.

Advertisement for Maritime Transport Research, highlighting growth in general ship cargoes and the company's services.

Advertisement for U.S. group to make ion exchange resin in U.K., detailing the company's production capabilities and market focus.

Advertisement for Textile Sackings, mentioning Ferguson Printers of Carlisle and their services for textile manufacturers.

Advertisement for Orkney warning, discussing the impact of uranium mining on the local community and the environment.

Advertisement for Meriden back, mentioning Meriden Motor Cycle Co-operative workers return to duty after a three-week lay-off.

Advertisement for Shootings protest, reporting on the Ulster Unionist Party attacking the authorities yesterday.

Advertisement for Eagle aircraft, featuring an illustration of an Eagle Super King Air 200 and text describing its performance and specifications.

the raw material of successful business

In difficult times, maintaining supplies of vital raw materials and understanding the economic, as well as the technical needs of industry are essential to sustain successful enterprise.

Albright & Wilson supplies vital raw materials—it is one of the world's largest manufacturers of chemicals based on phosphorus—an element of fundamental importance to life and industry.

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Albright & Wilson manufactures phosphorus chemicals at plants in the UK, Canada, Australia and India, and markets them throughout the world.

You may be surprised at the variety of fields in which phosphorus chemicals are essential today. For instance, Detergents, Water treatment, Industrial and Institutional cleaners, Metal treatment, Bread and self-raising flour, Soft drinks, Plastics, Lubricating oils, Hydraulic fluids and Pesticides.

Phosphorus, of course, still lights every match that is struck in the world!

Albright & Wilson serves a wide range of industries: whether you're in anti-corrosion or anti-perspirants, food or fertilisers, it could make a material difference to you to get in touch with us.

Phosphorus being loaded into Albright Explorer, one of Albright & Wilson's unique bulk phosphorus carriers at the company's Long Harbour, Newfoundland plant.

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Food prices rise at less than half January rate

BY STUART ALEXANDER

FOOD PRICES rose in February at less than half the January rate, according to figures for the Financial Times Grocery Price Index.

Although dairy goods, coffee, some bread and preserves all went up, they were matched by a sharp fall in cost of meat and fruit. Non-foods reversed the January fall. The net result was a 1.16 per cent increase in prices and a 2.93 increase in the index to 263.96.

Coffee continued to soar, with rises of up to 27 for a four-ounce jar compared with January, but in some areas, which had already seen high price rises, there was little change.

Eggs were generally more expensive by about 3p a dozen, and cheese by 10p a pound for Cheddar. Bacon was cheaper all over the country, as late winter special offers became available.

Beef surpluses were again cheaper, as was pork in general. Bangladeshi lamb were balanced by some increases. Chicken cost more.

Prices of fresh fruit and vegetables, appreciably higher in January, stabilised and in some cases even fell as variety improved slightly and new-season crops from abroad became more plentiful. Tomatoes, however, were more often up in price than down.

Prices crept up in the non-foods sector. Detergents and household tissues cost a startling 6.03 per cent more. No one is held responsible, the increases applying to most goods.

The rise in frozen foods and canned goods was small, partly reflecting the easier situation in an industry which last year was doubtful of maintaining full supply.

The outlook for meat prices is upturn, with no early signs of a market which has seen prices steadily sliding. Beef, however, is not likely to go down much further and the New Zealand lamb producers are already complaining that the price is too low.

More worrying is the prospect of food price increases over the whole year.

Compared with December, the FT index is already up by 3.73 per cent, which bears out fears expressed by the Food Manufacturers recently that the total rise in 1977 would be at least 15 per cent, more probably 18 to 20 per cent.

FINANCIAL TIMES SHOPPING BASKET

	February £	January £
Dairy Produce	134.87	130.83
Sugar, Tea, Coffee, Soft Drinks	67.10	63.48
Bread, Flour, Cereals	78.61	77.37
Preserves and Dry Groceries	28.03	25.84
Sauces and Pickles	13.53	13.60
Canned goods	45.13	44.74
Frozen foods	39.92	38.47
Meat, Bacon, etc. (fresh)	167.64	172.50
Fruit and Vegetables	124.44	125.87
Non-Foods	52.20	49.23
Total	750.57	741.93

	Feb. 100	Mar. 101.09	Apr. 102.73	May 105.75	June 108.00
July 107.24	Aug. 105.40	Sept. 105.26	Oct. 104.35	Nov. 105.48	Dec. 108.26
Jan. 109.18	Feb. 109.10	Mar. 109.24	Apr. 108.04	May 109.34	June 115.97
July 111.97	Aug. 113.40	Sept. 112.14	Oct. 113.15	Nov. 111.48	Dec. 114.49
Jan. 117.56	Feb. 119.25	Mar. 120.53	Apr. 123.80	May 125.57	June 128.81
July 127.44	Aug. 126.59	Sept. 129.39	Oct. 133.83	Nov. 135.83	Dec. 138.26
Jan. 141.41	Feb. 141.52	Mar. 142.46	Apr. 143.23	May 143.29	June 142.64
July 145.17	Aug. 147.97	Sept. 146.22	Oct. 145.25	Nov. 147.46	Dec. 150.53
Jan. 162.84	Feb. 167.77	Mar. 173.50	Apr. 178.49	May 183.41	June 193.02
July 188.45	Aug. 189.23	Sept. 186.64	Oct. 189.79	Nov. 194.78	Dec. 201.90
Jan. 208.33	Feb. 211.81	Mar. 216.60	Apr. 222.43	May 226.78	June 222.82
July 216.71	Aug. 221.34	Sept. 230.34	Oct. 237.28	Nov. 241.53	Dec. 244.82
Jan. 251.03	Feb. 253.96				

Index: 253.96

FT SURVEY OF CONSUMER CONFIDENCE

Pessimistic view of future as inflation worries mount

BY ELINOR GOODMAN, CONSUMER AFFAIRS CORRESPONDENT

WITH CHRISTMAS and the clearance sales over, consumers were again taking a gloomy view about the future at the beginning of this month.

According to the latest Financial Times survey of consumer confidence, people were taking a markedly more pessimistic view about the future at the beginning of this month than they had a month ago.

The proportion of people feeling worse off compared to a year ago also rose, sharply particularly among blue collar workers, while far fewer people thought it was a good time to spend money on items for the house than they had last month during the clearance sales.

This month, those feeling pessimistic about the future outweighed those feeling confident by 12 per cent, among all adults as against only 8 per cent last month.

per cent more C2DE men felt worse off this month because of inflation compared to a year ago. This was the highest proportion for some time and women from the same background felt only slightly less pressured by inflation.

ABC1 professional men, feeling worse off compared to a year ago, outweighed those feeling better off this month. The six-month "past prospect" figures for both ABC1 men and all adults continued to deteriorate.

The biggest change this month was in the attitude towards buying things for the house. In spite of feeling hit by inflation, more people considered it was a good time to buy consumer durables at the end of last year.

The view strengthened in January, particularly among professional men, but in February people were feeling far less bullish about spending money.

LABOUR NEWS

More opposition to pay curbs

BY DAVID CHURCHILL, LABOUR STAFF

GROWING opposition to the social contract and another round of pay restraint emerged at the week-end from trade unions representing engineers, car workers, bank staff, and civil servants. They suggested they were unwilling to accept a new pay policy unless the Government radically altered its policies.

The executive of the Society of Civil and Public Servants, which represents 100,000 middle management grades, is opposed to a new pay policy unless the Government allows the Civil Service pay research unit to operate again.

The unit was suspended at the beginning of this first pay policy. Mr. Gerry Gillman, the union's general secretary, said last night the executive decision had to be taken by the society's annual conference in May.

The effects of the social contract on staff in the Bank of England have been spelt out in a letter to the chairman of the 3,500-member Bank of England Staff Organisation. It said the pay policies "have produced serious injustices to various categories of staff."

A week-end rally of more than 1,000 trade unionists in London was held by Bob Wright, Left-wing candidate for the

dancy of the Amalgamated Union of Engineering Workers, and Mr. Derek Robinson, chairman of the Leyland combined shop stewards committee, that the social contract was dead and that there should be free collective bargaining from August.

Mr. Sid Weighell, general secretary of the National Union of Railwaymen, said in the latest issue of his journal that he was in favour of the social contract continuing, although he felt a new pay policy should be more flexible.

NALGO threat to abandon social contract

By Our Labour Staff

CUTS in public expenditure could lead the biggest public sector union, the 670,000-member National and Local Government Officers' Association, to withdraw its support for the social contract, it was claimed at the week-end.

The warning came from Mr. Geoffrey Drain, NALGO general secretary, in a letter to MPs urging them to put pressure on the Government to reconsider its cuts.

Wages Council 'not needed'

THE FUR Wages Council has not fulfilled its proper role in recent years and the union is concerned—the Shop Distributive and Allied Workers—has suggested that it is no longer needed. Abolition has now been referred to the Ad-

visory Conciliation and Arbitration Service by Mr. Albert Booth, Secretary for Employment.

TUC BUDGET PROPOSALS SINGLE OUT JOBS AND PENSIONS FOR MORE SPENDING

Reflation of £2.4bn. urged

BY CHRISTIAN TYLER, LABOUR CORRESPONDENT

A BUDGET reflation of £2.4bn. of which £1.5bn. net should be in the form of income tax cuts, is called for by the TUC in its economic review published today.

The areas singled out for more Government spending are pensions, the construction industry, and measures to save and create jobs—including a new "job expansion subsidy."

The cost of these measures in 1977-78 could, the TUC admits, mean a conflict with the limit on the Public Sector Borrowing requirement set by the letter of intent to the IMF.

But calling in aid the now common forecast that the borrowing requirement will be £1bn. less than thought earlier, the TUC says that the net cost of its proposals could be less than a £1bn. once the saving from job creation and other measures was taken into account.

It notes that the social contract and the industrial strategy are given prominence by the Government in the letter of intent and says: "Fulfilling these aspects of the letter of intent are just as important as if not more important than rigid adherence to monetary targets."

It makes it clear that the form of pay discussions will depend on "an acceptance response" to the policy changes called for in the review.

It again urges that the National Enterprise Board should have £1bn. a year to spend when fully operational.

For the Budget, it proposes £200m. of funds for the NEB and for aid through the Industry Act.

Construction, energy and transport are singled out for special attention in the context of the industrial strategy and the TUC calls for £100m. to be spent on capital projects in building and civil engineering.

The £300m. cut in the 1978-79 housebuilding programme should be restored.

Direct action on employment should include a postponement of the closing date for application under the Temporary Employment Subsidy to the end of this year. The subsidy had saved about 151,000 jobs and the cost of the extension would be £70m.

Redundancies should not take place without the approval of the Department of Employment, and the subsidy should be paid on the initiative of public authorities while the department is investigating planned redundancies. A further £35m. should be spent on the job creation programme.

Regretting the Government's decision to abolish the regional employment premium the TUC calls for a job expansion subsidy, to which the Government should contribute £100m. net of the saving in unemployment benefit.

Under this scheme a company which expanded its employment should be paid a subsidy of £20 a week for each extra job above its average payroll for 1976.

Further measures were needed to help finance training in industry by employers and to present "arbitrary arrangements" for providing educational allowances should be replaced by a mandatory scheme of standard payments.

The TUC repeats its commitment to planning agreements in the top 100 companies, and says that the Government will have to rethink unless some voluntary planning agreements are reached.

A neglected elite

BY ALAN PIKE, LABOUR STAFF

"HUGH SCANLON says that toolmakers must not become an industrial elite within car factories. There already is an elite—the people who sweep the floor."

Such comments, common on the picket line outside British Leyland's Castle Bromwich body plant since the company-wide lock-out strike began a week ago, illustrate the level of bitterness which some of the motor industry's most highly-skilled workers feel about their relative position to-day.

The picket itself is a symptom of their attitude, for Castle Bromwich toolmakers are proud of a virtually strike-free industrial relations record.

Conversation with the toolroom strikers gives practical confirmation to the picture of skilled engineering workers suffering disillusion from problems of pay, prospects which was presented in a National Economic Development Office report published last month.

Rewarded

Rates of pay and levels of differential between skilled and semi-skilled workers vary from one Leyland factory to another. At Castle Bromwich toolmakers claim that most are lucky if they take home between 75p and £1.25 a week more than production workers who do not have the same training or responsibility.

One contemporary view in the motor industry — the thinking behind the common production pay rate at Leyland's Cowley plant — is that all car workers contribute to the final product and should be equally rewarded.

Such a view is completely rejected by the toolmakers. They respond to this idea, and to criticisms that their present strike is suicidal in the economic state of British Leyland, with the reply that the company is finished anyway unless it learns

to motivate and reward its key workers properly.

To appreciate the intensity of feeling which has led to 3,000 members of the Amalgamated Union of Engineering Workers remaining on strike defiance of their executive it is necessary to understand that in an industry where the terms skilled and semi-skilled are sometimes used loosely, toolmakers really are craftsmen.

The toolmaker's job is to make, set and maintain his factory's jigs, dies and machine tools to the highest standard of accuracy. A good toolmaker will quite naturally take engineering drawings home and work on problems in his spare time if he is faced with a difficult job. In many plants it is to provide his own tools, which will now cost £200-£300 a set.

And, above all, a toolmaker is a time-served apprentice. To underestimate the importance of this is to misunderstand the social foundation of an industry like Birmingham, where for generations it has been believed that to get a son apprenticed to learn a trade is to give him an excellent start in life.

Some of the older men on the picket line at Castle Bromwich worked a seven-year apprenticeship with a tiny starting wage. To-day the apprenticeship period is about four years but young people still accept lower starting rates than they can get in unskilled jobs in the expectation of a more secure future.

One Castle Bromwich picket recalled that when he became an apprentice 25 years ago, he was one of four successful applicants to a job which is now becoming difficult for the engineering industry to attract and retain suitable young people.

Such a view is completely rejected by the toolmakers. They respond to this idea, and to criticisms that their present strike is suicidal in the economic state of British Leyland, with the reply that the company is finished anyway unless it learns

and leave. "We've been visits on the picket line by people who tried to work with us," said Mr. Lowe. "They are doing unskilled work where their training absolutely wasted. But they're not as paupers now."

However — again confirming the conclusions of the NEI report — the pay differential problem, although one of immediate issues, behind it strikes is not the only cause of discontent.

There is at least as much resentment about the status of the skilled worker, with many complaining bitterly that despite their training and length of service they do not have the same security and privileges as a 16-year-old tyler in a factory office.

Inquiry

The AUEW, historically craft union although it now has all types of engineering workers in membership, sympathises with this is to misunderstand the social foundation of an industry like Birmingham, where for generations it has been believed that to get a son apprenticed to learn a trade is to give him an excellent start in life.

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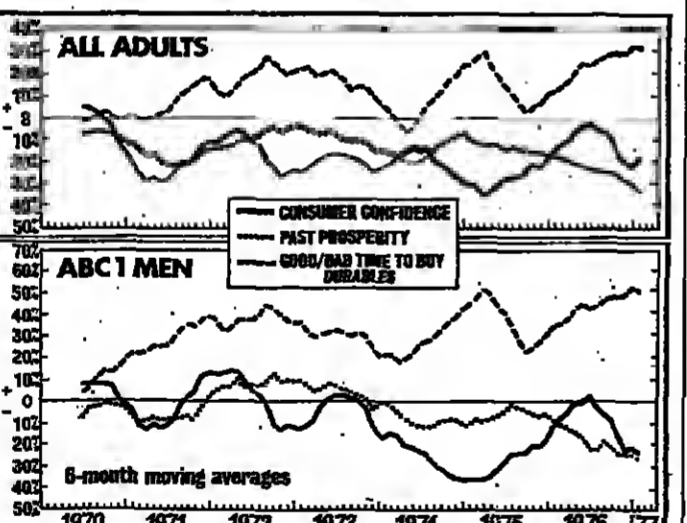
Worries

Even so, confidence is higher than it was in the last four months of last year. In November, for example, Jeremiahs outnumbered optimists by 36 per cent.

Worries about inflation had tended to increase since January, particularly among professional families, but lack of confidence in the Government had not returned to its pre-Christmas low.

The professional men, who last month were more optimistic about the future, took a gloomier view than others in February.

The six-month moving average figures for future confidence show a small improvement for all adults because, in spite of the fall in confidence this month, people are feeling slightly more cheerful than last summer. The six-month figure for ABC1 men, however, showed a small fall.



SNOW REPORTS

SCOTLAND
 Castles: Main runs and lower slopes all complete. New snow on a firm base. Vertical runs 1,000 feet. Access roads clear. Snow level 1,200 feet.

ENGLAND
 Chesham: Main runs all complete. Lower slopes, ample outcrop areas. Hard packed snow. Vertical runs 1,000 feet. Access roads clear. Snow level 1,200 feet.

Wales
 Glynedd: Main runs and lower slopes all complete. Hard packed snow on a firm base. Vertical runs 1,200 feet. Access roads clear. Snow level 1,200 feet.

Forecast: Mainly dry. Sunny intervals, especially at Glynedd. Freezing level 1,500 feet. Wind SE, moderate at first.

APPOINTMENTS

Sir Michael Herries joins National & Commercial Banking

NATIONAL AND COMMERCIAL BANKING GROUP has made Sir Michael Herries joint deputy chairman of the holding company. Sir Michael has been chairman of the Royal Bank of Scotland since October 1976.

director of Hepworth Plastics. At the same time, Mr. David W. Russell becomes managing director of Hepworth Plastics in succession to Mr. Donald Watson.

Kenneth Fleet as City Editor of the Daily Telegraph, who is leaving the newspaper announced yesterday, Mr. Clifford Garman, Deputy City Editor, will become Associate City Editor and Mr. John Davies, assistant to the City Editor, will become Deputy City Editor.

HOME CONTRACTS

Bowmaker £2.5m. machinery order

BOWMAKER (PLANT), Cannock, has received an order from Westinghouse Electric Company, a subsidiary of English China Clays, of St. Austell, Cornwall, worth £2.5m. for the supply of Caterpillar earthmoving equipment.

more than £80,000 for the supply of transmission equipment to export. British Rail's communication network is a part of the order for multiplex equipment at Nottingham to increase facilities being provided under a total operations processing systems.

Wearra GROUP LIMITED

Highlights from the circulated statement of the Chairman, Mr. A. J. HARRIS:-

- The expansion of overseas sales coupled with the recovery of the home market has produced a profit before tax of £228,000 against £49,328 for the previous year. A final dividend of 1.25p per share, the maximum permitted, is proposed.
- This improvement in results has stemmed from a number of factors over the last two years the benefits of which are now showing through. Our export sales have increased materially and I believe that there exists considerable potential growth in exports for the Group; indications are that our sales to existing overseas customers will increase further during the current year.
- The retail company has again provided a substantial proportion of the Group's profit. I am convinced that good retail business remains a suitable area for expansion and several additions to the Group's own outlets are being negotiated.
- No really significant measures have been taken by the Government to mitigate the problem of low-priced imports, but we have introduced a range of competitively priced shoes which represent extremely keen value. However, the greater part of our production is and will continue to be well-styled shoes in the medium to higher price range.
- Although I am much heartened by these better figures I believe that, subject to general economic conditions, we can and will do better as we have the right people, policies and products to meet the demands of the market.

IRTHLINGBOROUGH, NORTHAMPTONSHIRE

Mr. Ian Gravener has joined the Board of GEORGE DOLAND and becomes joint managing director. With re-structuring in progress, Mr. R. Peter Hart, non-executive director, has resigned.

The new air officer commanding-in-chief, RAF Strike Command and commander-in-chief, U.K. NATO air forces is to be Air Marshal Sir David Evans. Currently vice-chief of the staff, he will take up his new appointment on March 26, with the acting rank of air chief marshal. He will succeed Air Chief Marshal Sir Nigel Maynard who is retiring from the service.

Mr. John Ormiston, managing director of P. Ormiston and Sons, has been elected president of EUROPROPS—the organisation responsible for the formulation of proposals concerning small and medium-sized businesses in the EEC.

Mr. R. J. Foskett has been appointed secretary of the AUSTRALIAN MUTUAL PROVIDENT SOCIETY. Mr. Foskett succeeds Mr. J. T. C. Earley who has retired after 45 years with A.M.P.

REDLER CONVEYORS, Stroud, Gloucestershire, part of the Gloucestershire Group, has been awarded a contract for the supply of process plant to Minton and Fison, Stowmarket, Suffolk, for a new mastic plant.

WRIGHT AIR CONDITIONING (SCOTLAND) has been awarded a £50,000 contract by Polaroid (U.K.), Dumbarton, for the supply and installation of an air conditioning system. The Commission power to launch specific price investigations and for owners to control individual prices.

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The Executive's and Office World

EDITED BY JOHN ELLIOTT

David Fishlock looks at the development of teaching companies as a means of training engineers while Sue Cameron describes how GEC has adopted this concept for its own particular use

Universities in industry

THE IDEA of using teaching companies to train engineers, in much the same way as teaching hospitals train doctors, the brainchild of Mr. Theo Williamson, former research and development director of Alms, the cigarette manufacturing machinery group.

A teaching company, to quote its inventor, should be "the engineering equivalent of a teaching hospital, where experienced practitioners, researchers and students intermingle and fertilise ideas," while making in industry.

The idea has fired the imagination of the Science Research Council, with its £2m. budget this year to be used for university research in physical sciences. Under the chairmanship of Sir Brian Womersley, and more recently Sir M. Edwards, the SRC has been energetically building the national research effort engineering sciences, even though this has meant sacrificing "pure science" projects involving new satellites and scopes, for example.

A year ago the SRC, in collaboration with the science research Council, launched the teaching company scheme. The scientists combed industry for manufacturing companies receptive to new ideas, particularly the idea that scientists might have something original to offer the factory line. They chose companies and began to produce postgraduate students to work on specific problems. All these problems were directly concerned with the organisation of production methods and control.

Pilot projects
The first "school report" just came before the council is SRC. The upshot is that two sponsors are talking putting as much as a year behind about a series of pilot projects by the end of 1980.

The five university departments of production technology led in the scheme the idea brought a relevance to real industrial problems which was usually often lacking. For participating companies which British industry has been finding it almost impossible to attract in recent years.

people, and was prepared to invest several million pounds. In fact, his company has been under-investing, he says, because it could not find the people.

CompAir Industrial, Britain's biggest makers of pneumatic equipment, is delighted too. "We're getting some good fundamental work done at the Government's expense," says Mr. Peter Bonner, managing director of CompAir's Broomwade works at High Wycombe. He liked the businesslike way the scheme had been presented.

Re-think strategy
In association with the department of production technology at Aston University, he has set three teaching company associates to work on one of the investment projects from his corporate plan, namely to re-think company strategy on spare parts. In most companies spares are the first to suffer as soon as the market begins to pick up. He would like to see the manufacture of spare parts separated from main production lines. He has set his graduates to sit on the options and define the pitfalls—the breaking points of their schemes.

"Everyone wants it to work—and from our point of view we can see it paying off," says Mr. Bonner. A successful strategy for spares might well be applicable to manufacturing industry generally, he feels.

He has been so impressed that he plans to use teaching company associates on another project from the company's corporate plan—to devise new systems for keeping management informed at Broomwade. But he stresses that he still has the final word on whether a given scheme is to be implemented, and the right to censor commercially sensitive information should the scientists want to publish their findings.

At Manchester University Institute of Science and Technology (UMIST), Professor B. J. Davies is responsible for the biggest of the five company/university collaborations so far. Formerly technical director of Staveley Machine Tools, Professor Davies enrolled, as post-graduate students, three graduates from Platt Saco Lowell of Rosendale, makers of textile spinning machinery.

Practical graduate training at GEC

SIX YEARS ago senior managers at the GEC Switchgear plant at Trafford Park did some research into future staffing needs and found that they were "frighteningly" short of young, up and coming engineers.

The engineers on whom the company relied were nearly all in the 50 to 60 age group and there were few young men who could replace them. One reason for this was the economic squeeze of the mid-1960s which had led many bright, young engineers to leave manufacturing in search of more remunerative jobs.

GEC Switchgear itself was only just beginning to emerge from a long and difficult period of retrenchment. The 1960s had seen a huge drop in demand from the home market and the number of people employed at Trafford Park had fallen from 23,000 in 1958 to only 7,000 in 1971.

But by the beginning of the 1970s, business was picking up again because of an expansion into overseas markets and the company decided to take the opportunity to rethink its policy on the training of manufacturing engineers. One outcome of this is that GEC Switchgear is among the first engineering teaching companies.

The idea of a teaching company is that graduate engineers should have the chance to learn about the practical problems of manufacturing, such as man management and cost limits, while also learning how to apply the theoretical knowledge they have acquired at university. They are tutored by senior, practicing engineers in the teaching company itself in much the same way as junior doctors are taught by consultants in a teaching hospital.



Mr. Theo Williamson (left), originator of teaching companies, and Professor Alec Chisholm, of Salford University, who aroused GEC's interest in them.

For example, is working on a project to improve the factory's layout. At present the Trafford Park factory is in the midst of a complete re-organisation. Seven years ago exports accounted for only 20 per cent. of GEC Switchgear's total production but to-day the proportion is 80 per cent. Much of the electrical equipment made by the company goes to developing countries which cannot afford the more expensive products that were made formerly for the home market. The aim of giving a trainee a project on production layout is that he should produce some practical ideas for cutting costs. The company is not interested in vague, academic suggestions but wants some hard proposals that can be put into effect.

Plenty of scope
The company and the university want to give the trainees projects which offer plenty of scope while not being too much for their capabilities. The plan is that each project will last between 18 months and two years. Once he has finished his project, a trainee will have no further commitment to GEC Switchgear although the company hopes that some of the young engineers will ask if they can stay and work at the factory.

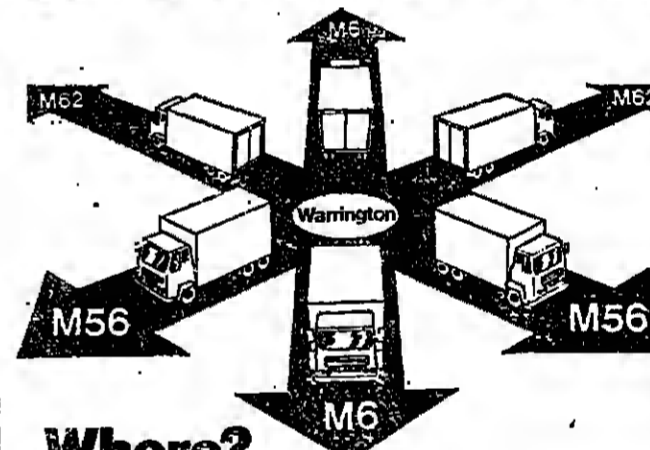
Eventually GEC Switchgear and Salford University hope to have between six and eight trainees but the whole teaching company scheme is still in its infancy and the experiment will have to be assessed, before final numbers are fixed.

So far over 160 graduates have applied for the GEC traineeships which carry salaries in the region of £3,500. The company has had almost as many applications for the post of project adviser which suggests that the scheme has aroused considerable interest among practicing engineers.

Some companies have run effective graduate training schemes and Professor Chisholm says GEC Switchgear was among these. But senior managers at Trafford Park say that if the teaching company project is successful, then it will prove to be better than the old system of sending young engineers from one department to another within the company. They say that because trainees, in a teaching company learn by doing a real job of work both the company itself and the young engineers will benefit far more.

The managers at GEC Switchgear believe that other bonuses could arise from the teaching company scheme. They think that the close relationship they have now established with the mechanical engineering department at Salford University could prove extremely useful. They also say that explaining to job the practical side of the GEC Switchgear systems to and support they received from trainees is an excellent dispersing engineers varied discipline for the senior staff in the company.

The where and how of good distribution



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Where your vehicles are on the M6 and M62 as soon as they're out of your gates. Where you're within 1 hour of 15 million consumers. Where you're only 20 miles from two container ports and 20 minutes from an international airport on the M56. Where you will find ready built warehouses and sites for purpose designed premises.

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February 28, 1977.

Foreign managers
A BIG INCREASE has taken place in the number of managers from Commonwealth countries being trained in Britain, according to the Institution of Works Managers. The growth is highlighted in a paper which has just been published by the Commonwealth Foundation and, quantifying the growth, it gives as an example an increase of almost 100 per cent. from 918 to 1,785, in the number of overseas members of the institution in the past four years.
The increase has been the result of a joint venture by the Commonwealth Foundation and the Institution of Works Managers. The development, according to the paper, has been highlighted following advisory visits by the foundation to Singapore, Malaysia, Jamaica, Trinidad, Tobago and Nigeria.
The report maintains that because of the variety, versatility and practical and academic qualities of the courses set by the institution, the certificate, diploma and advanced diploma of the institution can be readily used in other countries.
Mr. C. J. Benson, general secretary of the institution, describes the collaboration with the foundation as "extremely valuable." He feels that it makes both a positive contribution to higher standards of management and to "establishing the institution as a link between these overseas managers and the U.K. via their membership of the institution."

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THE GOVERNMENT'S EXPENDITURE PLANS

ECONOMIC VIEWPOINT

BY SAMUEL BRITTON

The strains begin to show

Little room for choice

IF THE Government's present economic policies should ultimately fail, it will certainly not be for lack of advice—nor, more recently, for lack of broad support.

While nobody—not even those responsible—pretends to any great enthusiasm for present policies, the new consensus is on the whole a hopeful sign.

The economic panel, which includes two retired economic advisers to the Government, Sir Alec Cairncross and Mr. Michael Posner, sets out the basic constraints in the new issue of the Midland Bank's Review.

Soares takes the plunge at last

AFTER MONTHS of hesitation Mr. Mario Soares has finally acted to save Portugal from economic and financial collapse.

The economic pressures on Mr. Soares are severe—with inflation at 20 per cent or more, the balance of payments deficit running at an annual rate of \$1.3bn. and unemployment at 17 per cent.

So far the reaction of the Communists to the Government's package has been guarded. In addition to price controls, the measures contain a number of steps to the left, such as higher unemployment and social security benefits.

WHEN PART I of the Public Expenditure White Paper was published at the end of January, I wrote that public expenditure was under control as it had not been for many years.

Moreover, the decisions made then did not touch the plans for 1979-80 and 1980-81. Most of these are listed in their original form in the present White Paper.

One's worst suspicions are confirmed by Chapter 4 on trade, industry and employment. Expenditure here looks at first glance as if it is to fall by over £900m. from £3.1bn. in 1976-77 to £2.2bn. in 1977-78.

THE NATIONALISED SECTOR

A better performance

FINANCING THE NATIONALISED INDUSTRIES: 1976-77

Table with columns: Capital Requirements, Internal Financing, Cash Limits, Self-financing Ratios. Rows include National Coal Board, Electricity, British Gas Corporation, etc.

THE NEW treatment of the nationalised industries in this year's White Paper is essentially a change in presentation: but it is both more logical and provides greater clarity.

These figures together and at the same time indicates how the new system of cash limits, as applied to the nationalised sector, is working—which, in all, is a decided advance.

The balance of the whole industrial programme is now tilted even further away from general payments, made on known criteria, towards discretionary support for favoured companies by Government departments and the NEB.

THE GERMAN MIRACLE - SPENDING AND REVENUE TOGETHER

Table with columns: Expenditure, Revenue, DM billions. Rows include Total, Taxes, Admin. receipts, etc.

Underlying this selective expenditure, it is mainly a list of figures on a take-it-or-leave-it basis. (The taxpayer leaves it; the recipients take it.)

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Secondly MPs and other commentators really must continue pressing the Treasury to publish expenditure and taxation projections side by side.

The Treasury has presented to the Expenditure Committee an excellent summary of public expenditure in other countries but it has drawn misleading conclusions from its own evidence.

It is beside the point to say that the revenue side does not represent "firm commitments" in these countries.

THE NATIONALISED SECTOR

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مخازن الصل

FINANCIAL TIMES SURVEY

Monday, February 28, 1977

Freight Transport Systems

Technological changes have created a wide range of specialised services which have brought down the cost of freight transport.

But national systems of regulation within the European Community need to be harmonised if the opportunities for improving efficiency are to be fully exploited.

More routes, more problems

By Colin Jones

THE MOVEMENT of freight does not often receive the dispassionate public attention that its crucial role in a modern industrial society ought to warrant. It has been reckoned that about 8 to 10 per cent of the cost of production and distribution in this country is spent on the movement of raw materials and finished products, and what evidence there is suggests that a proportion is not very different in other industrial nations.

Yet, though freight transport so makes a significant contribution to governmental revenues, to the balance of payments, and employs a significant part of the working population, it is not often suggested that a prime purpose of governmental intervention in this sector of economic activity should be the promotion of optimum source utilisation. Nor, it has to be added, do governments themselves always seem to see that way either.

True, the record of recent K. governments has been stily laudable. The railways are freed of the old Victorian

system of tariff-controls in the mid-1950s. This construction of motorways has been largely based upon the major industrial arterial routes. The ports have been re-equipped since the mid-1960s. The monopolistic system of capacity controls on road haulage were lifted in 1968. And last year's consultation document on transport policy was firmly predicted on the belief that freight transport should be treated as a commercial activity, subject to reasonable regard for environmental and social considerations.

Abroad, too, there are grounds for some optimism. The Ford administration made a brave attempt to open up the whole question of the federal system of regulation of the trucking and railroad industries. The EEC Commission in Brussels has since 1973 tried to point to a more liberal form of harmonisation of national regulatory systems, and even in West Germany and France we have seen moves to ease some of the more dirigiste state controls over road, rail and air transport.

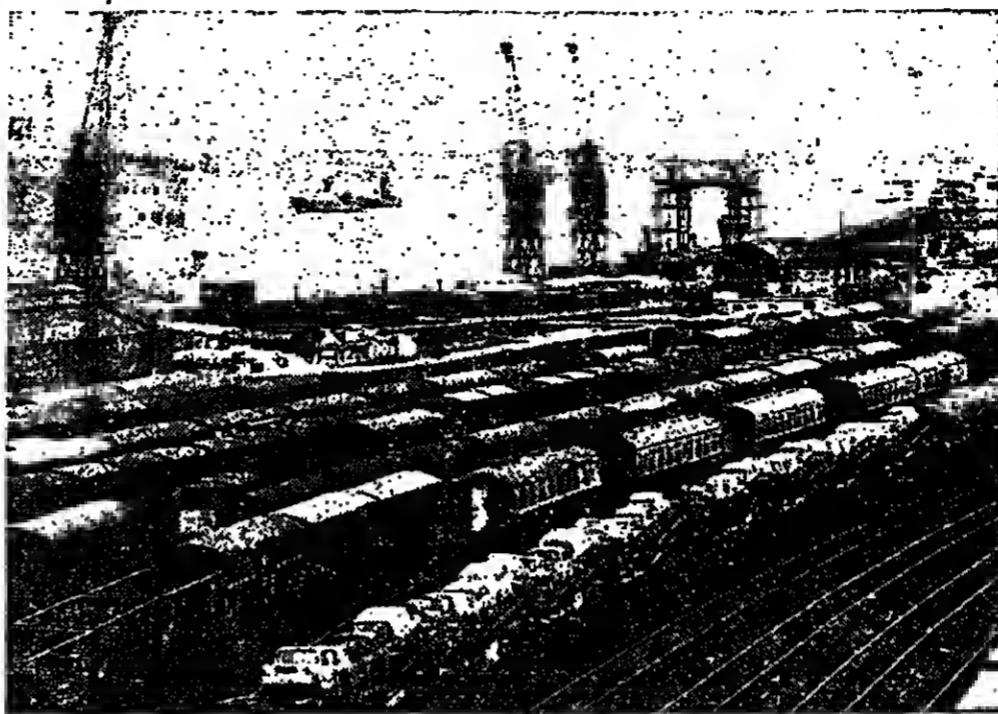
Allocation

But these developments do not radically alter a picture in which governmental intervention, whether in inland transport or in, for example, international civil aviation, seems traditionally to be more concerned with the safeguarding and reconciliation of conflicting interests than with the promotion of greater efficiency. Nor is it only a matter of regulation. The amount which governments are prepared to invest in transport—and its allocation—do not always seem to be based

upon a careful assessment of the possible economic returns, even at times when public spending is not under especial restraint. The taxation which is levied upon different forms of transport has not been logical and it is only relatively recently that the idea has developed of basing vehicle and fuel taxation upon the premise that carriers of all modes should be expected to bear their full share of the costs of the infrastructure they use. Similarly, there seems to have been little logical basis for working out speed limits; and few studies have been made of the relation between vehicle construction and use regulations and the effects of vehicle size upon operating costs.

Yet, in spite of all, the freight transport "industry" (if such a term can be used) has achieved a remarkable performance. It has, of course, benefited greatly from the long sustained upsurge in economic activity and world trade between the late 1940s and early 1970s. The output—in terms of ton-miles—of the world shipping and air freight industry rose by an average of 94 per cent a year in the 1950s and 1960s and the world output of road and rail carriers increased by 54 per cent a year.

During this period, too, there were marked technological changes. In the shipping industry, we have seen the development of ever larger oil tankers and specialised bulk carriers, and the conversion of most of the world's major deep sea and short sea trading routes to container and other unitised cargo-handling methods. In the air, large specialised jet air carriers are now being operated. On the railways, freight handling sys-



British Rail's export terminal at Harwich.

tems have been transformed by the adoption of freightliner and other full-train load systems, and by improvements in wagon design, signalling, communications, and motive power. On the roads, unit costs have been reduced in real terms not only by major road building programmes but also by the use of larger, more powerful, and better designed lorries, the introduction of new mechanical handling techniques on and off the vehicle, and by more systematic planning and operational control methods. And pipelines—an entirely new, albeit

still specialised freight carrier—have arrived on the scene as the pattern of sources of supply or of markets change that the full scope for economies can be judged.

The improvements that have been brought about by the adoption of, for example, bulk material transport and handling methods and containerisation are widely recognised. But there have been as marked developments in the transport, storage, and distribution of branded foodstuffs, clothing, and a wide range of other consumer items, prompted in part by the development of supermarkets, multiple

stores, mail order, discount trading, cash and carry wholesaling, and suburban or out-of-town shopping centres.

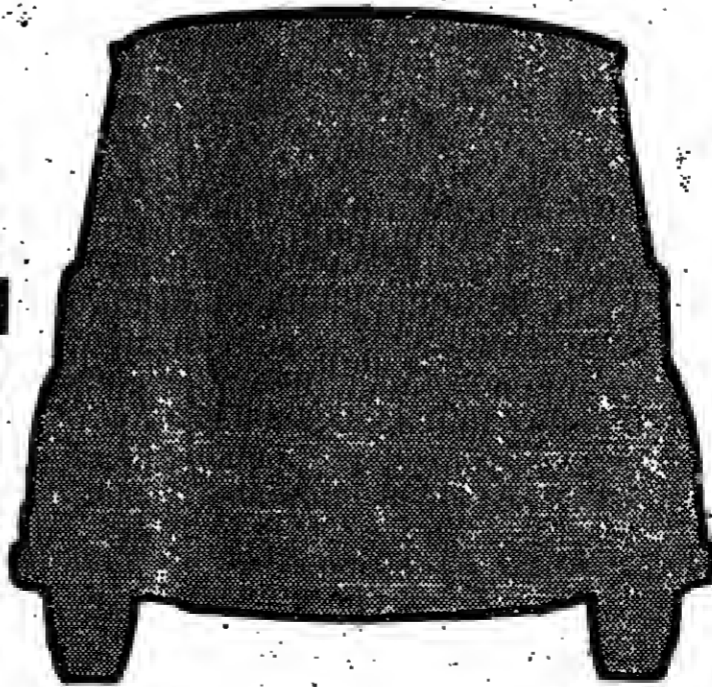
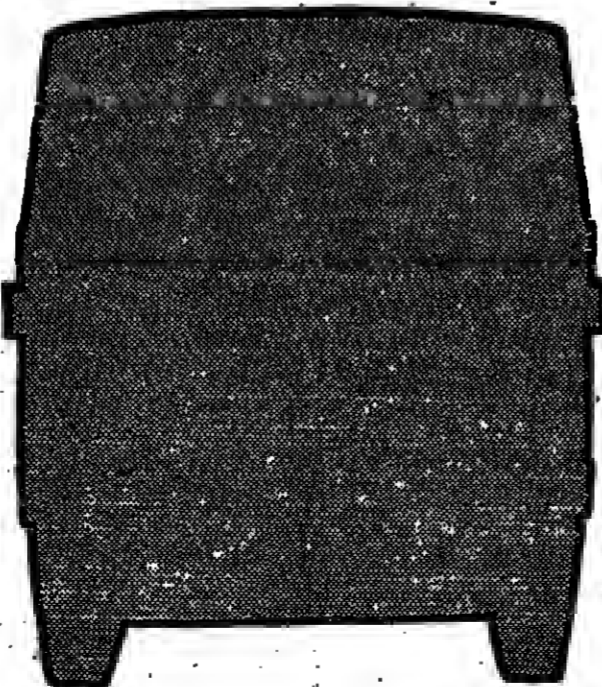
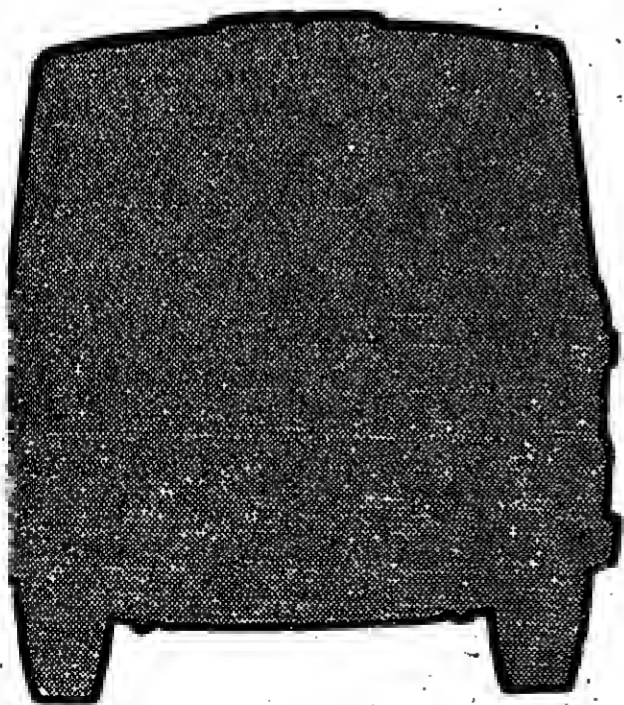
These developments have all led in turn to the emergence of a far more heterogeneous range of increasingly specialised freight transport services. In inland freight transport, there is now far less competitive overlap between road and rail: the two modes have become complementary. That does not mean that competitive pressure upon freight carriers is any less intense than before. But it does make it increasingly irrelevant to regard transport policy as basically a matter of resolving a road versus rail problem.

Thinking

Fortunately, this point was clearly perceived both by the authors of last year's Transport Policy consultation document in the U.K. and by those who have been endeavouring to shift the frontier—though not yet the reality—underlying the EEC's approach to a common transport policy. The prime objective of policy in the case of freight transport, last year's consultation document stated, is an efficient system providing transport services at the lowest cost in terms of the resources used, but the free operation of market forces needed to be balanced by proper regard for the impact upon the environment.

This caveat opens up a veritable Pandora's box of possible grounds for inter-Community countries are in a stronger competitive position, course. But the outcry against road freight activities, which had been provoked by the attempt to extend the motor-

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FREIGHT TRANSPORT SYSTEMS II

Slow recognition of management skills

"WE HAVE a long, long way to go in getting across the message about physical distribution management at all levels of industry in this country." It is the kind of sentiment often and persuasively voiced among those transport executives who fear that Britain's distribution needs are still changing much faster than the systems designed to serve them.

It is not surprising really that the British, with their innate resistance to substituting seat-of-the-pants intuitions for systems, especially systems capable of being taught in universities, have not warmed to such a concept. For a start it is an ugly term and a bit misleading in its inclusion of the word "physical," which seems to suggest a parallel notion (yet undigested so far as I know) of metaphysical or spiritual distribution management.

But saving the academic air of the theme, there are signs that the effective transport manager (to stick to his old title) is increasingly taking wider perspectives on his role and becoming more ambitious in the influence he feels he can legitimately assert within his company, be it manufacturing, retailing or even professional road haulage.

As is invariably the case, this gentle and gradual conversion is not a result of persuasion from American textbooks, but of necessity. Transport, so closely linked to energy costs, has not only become more expensive, it

has had to adapt to transformed marketing and production conditions. Every industry, in fact every company has its own example, but one need only consider the consequences for a distributor in, for example, the appearance of the electrical goods cash and carry retailer, or the trans-European production and assembly of motor vehicles.

Distribution
Superimposed upon this tapestry of change, the recession has served to concentrate minds. It is not just a simple question of cost cutting, although that is important, but a matter of devising a distribution system which will marry in with the most efficient production methods possible (which may well involve multi-works manufacture) and still enable a reliable flow of finished goods to the customer, not forgetting that in the centre of the operation, distribution factors play a key part in determining the level of stocks of both finished goods and raw materials needed by a business. In other words, for a fine-tuned business, distribution is likely to be a principal determinant of necessary cash flow.

For many, probably still the majority, of transport bosses, such considerations remain the stuff of which doctoral theses are made. This is always likely to be the case in an industry which by its very nature continues to have plenty of room for the small-scale operator.

But for the bigger companies and the more ambitious transport professional the nettle is there to be grasped. The response is manifest in all ways and at all levels: from the Unilever owned SPD company and the State-owned National Carriers creating a more secure relationship with customers in the pottery industry by setting up a specialised service using a new method of packaging to the decision by Dunlop to re-plan its backloading arrangements, with consequent savings of £300,000 a year.

The search for a solution to a distribution problem which may be showing up in straightforward customer complaints about poor delivery or in more subtle constraints on, say, the marketing department, can be complex, time-consuming and costly. It involves difficult research, often followed by even more difficult decisions, which may involve the need to close down inefficient depots or invest in new materials handling machinery.

A typical case involves a two-day visit to the company for the preparation of an initial prospectus, analysing the company, its distribution system, problems and tentative

remedies. A fixed price and time-scale for the job is specified and the client is then able to decide whether the consultant's services look useful.

The actual investigation can take anything up to a year and the cost of a six-month contract might be in the region of £18,000. As might be expected, the company is not short of examples of companies who were able to make savings of ten times the consultancy fee as a result of implementing a report's recommendations.

At the end of an investigation, the consultant will have gathered a comprehensive picture of the company's long-term sales forecasts and an understanding of its production methods, stock-holding, marketing, product design, customer geography, export traffic, inter-factory trucking, budget data, performance, security, charging system, control ratios, man-power and vehicle utilisation and a host of less easily classifiable facts. In addition, the consultant will have formed a detailed view of the management organisation and any monitoring system.

Frequently, customers lack basic data about their distribution task and even, it seems, about their marketing expectations. And quite often the consultant finds himself at the centre of an in-company battle over investment levels or prodding at a distribution arrangement which is already undermined by a dangerous neglect of cash flow.

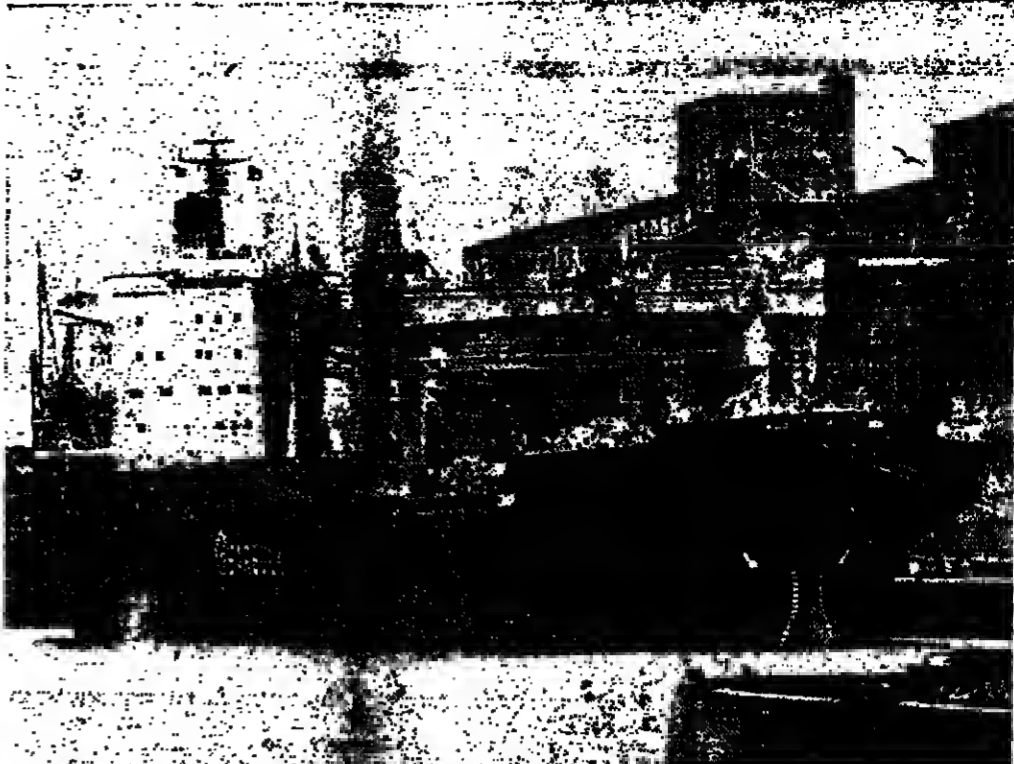
Research Planning will also tackle more straightforward questions of, for example, which is the most suitable and cheapest carrier available and indeed has a continuous audit of systems and costs for 130 clients.

Finally—and here there is agreement between the old and the new schools of thought about transport—the consultant will arrange for the recruitment of a distribution manager to keep the system in check.

It is the personal qualities of the man in charge who, as time passes, will have to see to it that his distribution system will not waste resources during recession and seasonal troughs, but will be elastic enough to take the strain when the business is expanding.

The indications are that in British industry, the distribution man is still given generally low status in the management pecking order and is thus lacking in influence in designing his company's working methods.

Ian Hargreaves



Unloading a cargo of grain at Avonmouth in the port of Bristol.

Patterns of demand

ON THE WORLD scene freight transport has been one of the fastest growing industries certainly since the end of the Second World War and probably since the beginning of the industrial revolution two centuries ago. Reliable figures are hard to come by but the U.K. Transport and Road Research Laboratory recently made a brave attempt to assess what data was available. It came to the conclusion that world demand for freight transport, as indicated by the somewhat unsatisfactory yardstick of total ton-miles of work done, had probably increased at the rate of almost 8 per cent a year between 1950 and 1970. This was faster than the increase in either world population or income during the same period and, for that matter, faster than the growth in world demand for vehicular passenger transport as recorded in terms of total passenger-miles.

This record of rapid growth is not all that surprising. The period between the end of the Second World War and the quadrupling of world oil prices in late 1973 saw the longest, sustained growth in economic activity the world has probably ever experienced, and the most notable element was the upsurge in international trade. The ton-mile yardstick which is conventionally used to measure the output of the freight transport industry gives most weight to transport activities which

involve the movement of heavy goods over long distances, irrespective of the value placed on that movement, and on this basis some 70 per cent of the total movement of freight in the world in 1970 was by sea.

product and freight-ton mile is not a precise one. Each 1 per cent increase in GDP in the U.S., for example, tends to be associated with an increase rather more than 3 per cent in the ton-miles of freight movement, which is about double the ratio found in many countries of Western Europe. The ratio can also vary over time as changes occur in location of industry or in pattern of wholesale and retail distribution. But the general proposition that the demand for inland freight transport tends to grow in direct proportion to the growth of economic activity as a whole remains broadly true and, because liberalisation of world trade since the 1940s and the growing appetite of the developed countries for raw materials, foodstuffs, and imported manufactures has led to a fast increase in world trade than total world economic output, the role that railways play in inland freight movement around the world may always be appreciated in a country where rail's share of the total freight market has been declining for decades to reflect the trend of visible trade between countries, road and rail freight movement on freight is far more important than road freight movement. The rate of growth in national economic activity. The correlation between gross domestic product and ton-miles of freight is almost 70 per cent of freight ton-miles of freight.

Technical
Nevertheless, unsatisfactory though they may be as a precise measure of freight activity, ton-miles do give us some idea of relative rates of growth. According to the TRRL, the output of the world shipping industry as measured in terms of ton-miles grew by about 8 per cent a year in the 1950s and by about 12 per cent in the 1960s. The growth of air freight, which benefited from technical developments in civil aviation as well as from the upsurge in international trade during this period accelerated from about 15 per cent a year in the 1950s to about 17 per cent in the 1960s. Both rates of increase were considerably faster than the overall growth in the total inland movement of freight, which increased by about 5 per cent a year during the 1950s and by about 6 per cent in the 1960s.

Whereas the movement of freight by sea and by air tends to reflect the trend of visible trade between countries, road and rail freight movement on freight is far more important than road freight movement. The rate of growth in national economic activity. The correlation between gross domestic product and ton-miles of freight is almost 70 per cent of freight ton-miles of freight.

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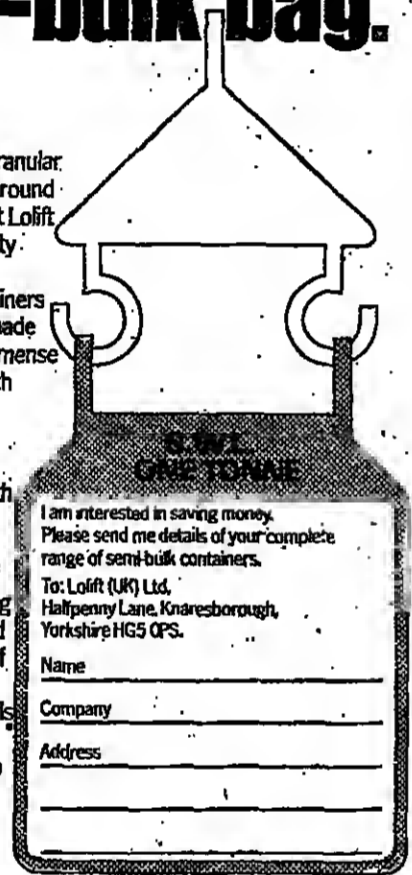
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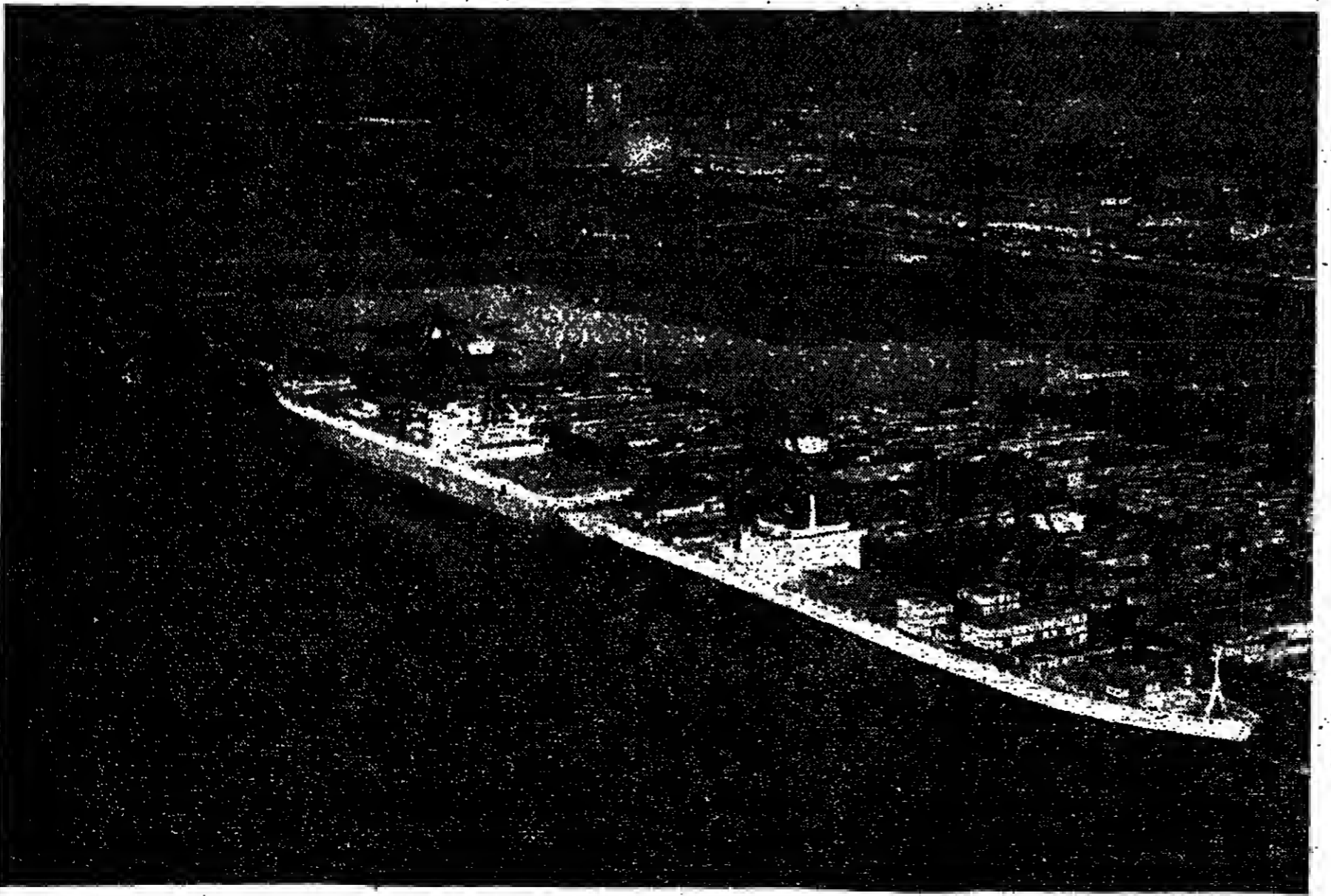
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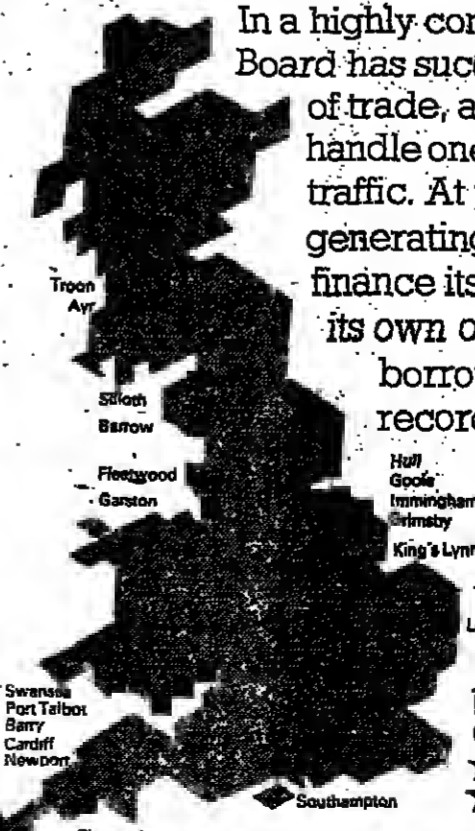
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FREIGHT TRANSPORT SYSTEMS III

The glamour goes out of technology

NO BUS OPERATOR is likely to leap for his cheque book on reading the final report of a Government experiment with small electric buses. On the basis of present-day technology, they compare poorly with the diesel bus.

The conclusion is one the transport technologists have been forced to time and again in the past few years, once they examined more carefully the bold schemes of the 1960s, when such words as "hovertrains," "rapid transit," and "travelators" aroused so much excitement — and so much emotion when their economic worth was questioned. Most of the glamour projects have succumbed to a combination of adverse factors, of which five stand out prominently: high capital cost; poor overall economics; technological uncertainties; the fact that speed is energy-intensive; and most important of all, "people problems."

Let us take the electric bus trials as an example. The Department in which two 19-seat electric buses, specially built for the job, were run on regular routes by bus operators in 14 towns over a period of two and a half years. The technology was well-established—lead-acid battery storage, DC series-wound drive, thyristor control. The buses weighed 8 tonnes (laden)—3.5 tonnes of battery—and had a range of 39 km. Their colour was yellow to make them conspicuous (although the ash customers themselves favoured disappointingly apathetic about offering any views on the new bus). Availability at 83 per cent, was lower than operators expect but fairly good none the less for prototype vehicles.

Analysis of the basic costs indicates that this kind of bus is likely to show higher overall operating costs than a broadly equivalent diesel. But the final report last summer added a more encouraging note in stating that, given an advanced battery of the sodium-lithium type, of 200 watt-hours

per kilogram capacity, "energy consumption of a diesel equivalent of a small electric bus could be lower than for the diesel." The experiment included attempts at battery exchange en route, in an effort to extend the range. But this was "unlikely to offer an operationally or economically attractive solution to the range problems of the small electric bus."

Before we leave the electric bus, it is worth putting its vital statistics into perspective. Eight tonnes of bus would carry 1.65 tonnes of passengers. The red London double-decker (diesel) weighing 7.4 tonnes carries 4.4 tonnes of passengers.

Capital

A glance through the latest report of the work of the Transport and Road Research Laboratory at Crowthorne, Britain's biggest transport research centre, confirms that much of the euphoria has disappeared from the discussion of technological progress. Mr. Alex Silverleaf, director of TRRL's research programme, now approaching £10m a year, writes of "strong indications of less support for transport schemes requiring large capital investment, such as Minitrans and other advanced technology systems, and more for making the best use of what we have."

Minitram, which was being studied for a demonstration in Sheffield, has been dropped, and the relevant development is being confined to the application of automatic train control concepts to existing underground railways when this looks practical and economic.

Another project which has aroused great interest is the Speedway high-speed pedestrian conveyor developed by Dunlop. But an application study carried out for TRRL came to the "rather disappointing" conclusion that because the 6.4 mph

conveyor must run in nearly straight lines, and is comparatively expensive, British cities would offer few applications unless by installing one a city could make some financially attractive new use of its land.

The indignation aroused less than four years ago by a decision to axe the hovertrain project, because no commercial user or manufacturer was showing any willingness to help finance it, looks sadly misplaced today. Even then, the air-cushion suspension was already being displaced by magnetic suspension, on the grounds that the latter was silent and more amenable to control. But further experimental work on magnetic suspension by British Rail's laboratories at Derby, under contract to the Department of the Environment, although "technically interesting and valuable," shows no sign of leading anywhere useful for transportation in the foreseeable future.

But one major programme that has not been derailed by deeper experience of the problems is BR's advanced passenger train (APT), a project deliberately conceived as a way of "making the best use of what we have." BR has a track and signalling system, representing immense capital investment. Starting in 1962, it brought in aerospace engineers to design a new kind of train to run much faster within these important constraints. They applied themselves to such questions as the physics of steel-wheel-on-steel-rail interaction, analysis of the many degrees of freedom of the suspension, and control of tilting as the train negotiates curves and sharp bends. They resisted any temptation to conclude that all would be solved by tearing up the track. They came up with a system that BR hopes to put into service at the end of next year, in the form of three demonstration APTs running between London and Glasgow. The first trial runs should take place late this year.

The British Hydraulics Research Association has built a new large-scale hydraulic transport test facility at Cranfield, about to be commissioned, in which slurries with particle sizes up to 100mm, will be pumped through loops up to

250mm. (10 inches) diameter. TRRL is supporting work on another pipeline facility used to investigate the transport of materials pneumatically in the form of capsules. A test loop 0.8 km long and 900 mm (24 inches) in diameter has been laid at Milton Keynes.

Mr. Silverleaf, director of TRRL, tells a story which illustrates why much of the glamour has gone out of transport technology. A senior U.S. Department of Transport official was admitting that the enthusiasts had learned a sobering lesson. They firmly believed that the "mission approach" that had landed men on the moon could also be used to solve the problems of cities. It could not—because the problems of cities are "people problems" and therefore much more difficult.

Not just Britain but all highly developed nations have become disillusioned about the prospects for advanced transport technology. Only in the U.S. today is there some residual funding for glamour projects. A new, more philosophical approach has appeared, in which the challenge is recognised as much more intellectual. This is epitomised by the battle for safer roads, where it has become steadily more difficult to make advances that will contain the problem. Certainly all the straightforward answers seem to provoke immediate objections from some quarter or other.

Interest

For freight, the new technology attracting most interest is the possibility of "pipelining" raw materials, for example. The idea is not new—after all, the Post Office introduced it for moving mail across London in "capsules" in 1961. The attractions become more apparent when it is considered that the estimated annual cost of transporting aggregates—sand, gravel, road fill, etc.—for the construction industry in Britain was more than £200m in 1973, even before the big surge in energy costs. One proposal for such a freight pipe in Britain is to move pulverised fuel ash from the big coal-fired power stations of the East Midlands, at the rate of 20m tonnes a year, for land reclamation on the Humber Estuary.

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The technologists have been able to demonstrate the technical feasibility of a host of ideas—seat belts, head-up displays of speed, radar anti-collision devices, computer control of traffic, for example. But either the cost seems to outweigh the benefits or, as in the case of compulsory seat belts, the very idea arouses a profound emotional reaction—in other words, a "people problem."

David Fishlock
Science Editor

Demand

CONTINUED FROM PREVIOUS PAGE

traffic in the world goes by rail. This figure may be boosted by the very large quantities of freight that are moved by rail in Russia, which to-day accounts for about half of all world rail freight movement, and in North America, which accounts for a further quarter. But in every other continent, apart from Western Europe and South America, rail still carries more freight than road transport.

Even so, the rate of growth in rail freight movement is lower than that for road transport with the result that rail's share of the total inland freight market is steadily declining in every continent. In the 1950's the annual rate of increase in freight ton-miles by rail around the world was about 5 per cent, as against 7 per cent for road freight movement while in the 1960's the divergence increased to about 4 per cent, and 8 per cent, respectively.

The trend away from rail transport has gone further in Western Europe, the continent where the railway age began a century and a half ago. In the 10 years up to the OPEC oil price increase in late 1973, the total movement of freight transport within the nine EEC members increased by an average of 4 per cent a year. But rail freight movement hardly increased at all (a drop in rail carryings in the Netherlands and the U.K. more or less offset modest increases in the other seven member states). Road freight movement, on the other hand, rose by about 5 per cent a year and by 1973 it not only accounted for half the total EEC freight market but it also accounted for a larger share of the total inland freight market than rail in every EEC country except Luxembourg.

The EEC freight transport industry does not, of course, consist of road and rail transport alone. Inland waterways are major freight carriers in West Germany, the Netherlands, France, Belgium and—since coastal shipping is in a sense the British equivalent of the Rhine—in the U.K. In all, freight movement by water increased by about 21 per cent a year in the decade before 1973 when its 13 per cent share of EEC freight market in that year amounted to about half that of rail and about a quarter of the road transport industry's share. The remaining tenth or so of the market was held by pipelines, a

	1963	1972	% growth a year
Road	214	348	5
Rail	186	189	—
Inland waterways and coastal shipping	97	116	2
Pipelines	12	71	26
Total	509	724	5

Source: EEC Commission.

	1950	1960	1970	% growth a year 1950-60	1960-70
Shipping	2,750	5,650	16,350	8	12
Rail	2,000	3,340	5,030	5	4
Road	470	940	2,020	7	8
Air	1	3	16	13	17
Total	5,220	9,940	23,900	7	9

Source: Transport and Road Research Laboratory.

relatively new industry which is an important carrier of crude oil and refined products (and potentially of other items) and which has increased its carryings more than six-fold in the past ten years.

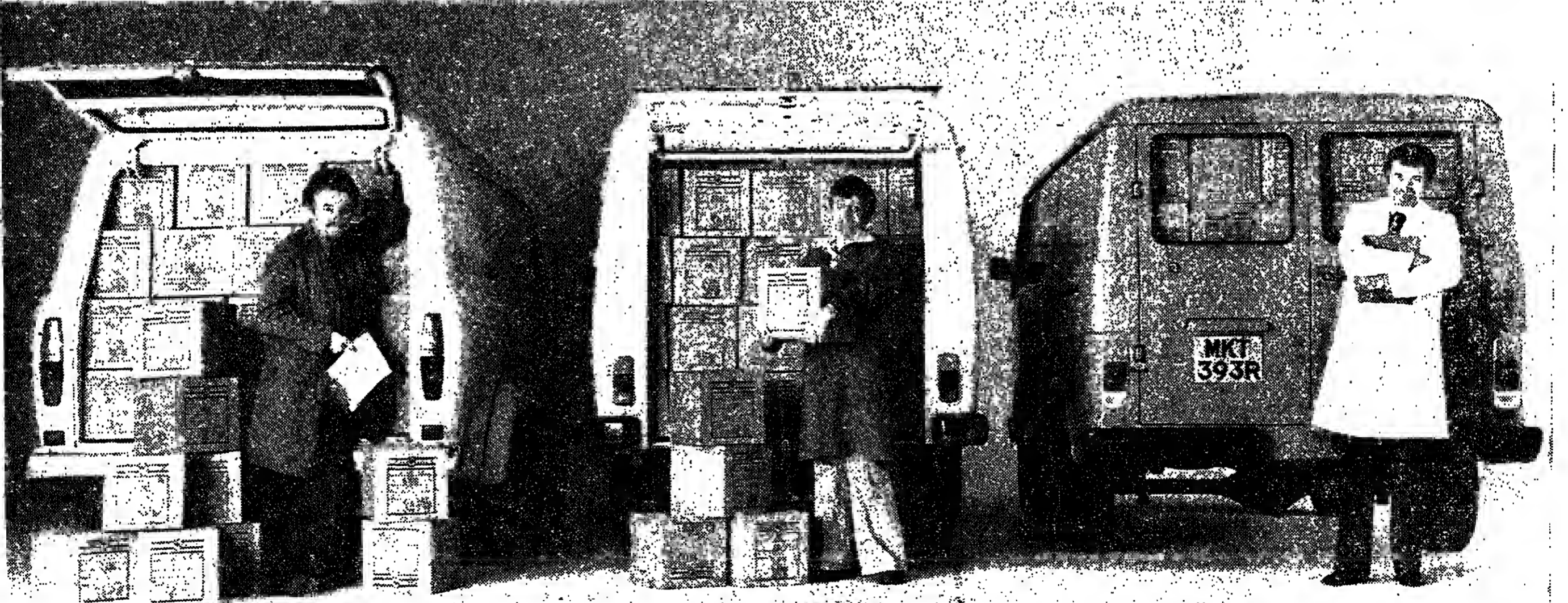
The changing modal split is the outcome of a variety of different factors—geographical, industrial, economic, social and legislative. Rail's share of the total freight market has declined in countries, like France and West Germany, which have operated a detailed system of entry, capacity and tariff control over road haulage, as well as in those, like the Netherlands and since 1968 the U.K., which have not (even in the first group of countries "own-account" transport by industrial companies owning and operating their own lorry fleets has tended to be free of control).

But perhaps the most important factor has been the changes that have been taking place in the demand for freight transport in the last two decades or so in all advanced industrial countries. The inland movement of coal and steel, the two staple rail freight traffics, have tended to decline as steel making has been concentrated into larger coastal plants using imported raw materials and as road transport industry's share, a wide range of direct coal usage has given way to an increasing concentration upon the

conversion of coal into electricity in large power stations sited in or near to the major coal producing centres. Road freight movement, on the other hand, has been much better placed to respond to the increasingly specialised and demanding needs of the consumer goods industries where fashions are constantly changing, new products are being promoted, stock control and specialised handling techniques are called for, new patterns of distribution have emerged, and where, in consequence, adaptability and speed of response are all-important.

Indeed, road and rail—and, for that matter, all the other modes—have increasingly become complementary rather than competitive. Whereas rail transport has been tending to concentrate upon the movement of materials in bulk and upon the thick, regular, two-way flows of traffic along the major national and international arterial routes, where rail's specialised advantages can still come into their own, road freight transport has tended to specialise in the short-haul movement of building materials, sand, gravel, and aggregate and upon the fast-growing and highly market-orientated movement of branded foodstuffs and consumer manufactures.

Coin Jones



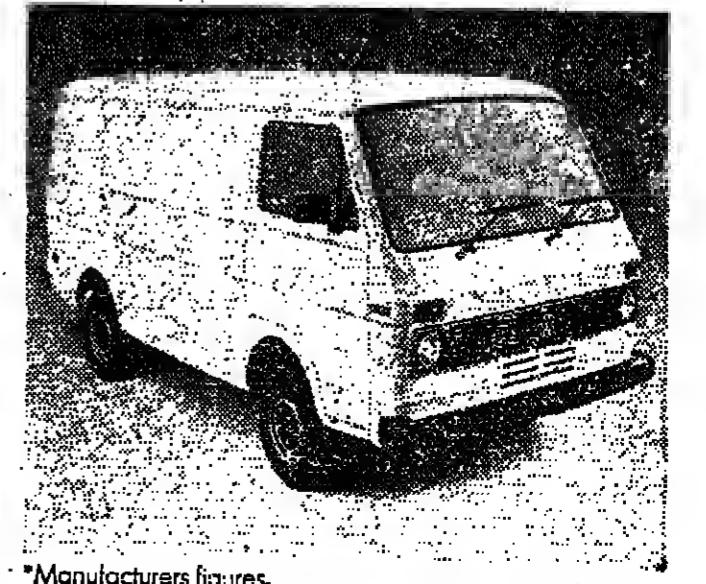
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FREIGHT TRANSPORT SYSTEMS IV

Investment may secure the future

LAST YEAR British Rail spent £40,000 freight wagons and did not lose a single ton of business. It is a statistic, one of many, which can be selected to show one of two things, depending on your viewpoint: that the Rail Board is now commendably cutting out the dead wood or that the Board should be roundly censured for allowing its arteries to become so choked in the first place.

The statistic certainly cannot be dismissed as a one-off freak. In 1977, the intention is to unload another 25,000 of the same type of vehicle, taking the total fleet to about 165,000—compared with a colossal 415,000 in 1970.

Perhaps the figures give some impression of the dimension of British Rail's freight problem. The picture is further coloured when it is realised that of the present fleet of about 184,000 wagons, only 100,000 have brakes and an even smaller proportion, about 15,000, have air-brakes. This means, in effect, that the majority of the fleet consists of cheap, inadequate wagons, which can still trundle along on local "feeder" lines and do some coal-carrying work, but which are useless for high-speed, high-quality freight trucking. It is absolutely obvious that only this latter category of transport stands any chance at all in motorway-age Britain of competing with lorries.

British Rail is not ashamed to admit that its wagon-load business has been neglected. Indeed the 1963 Beeching Report more or less wrote off wagon-load services and in recent years, rail freight has successfully concentrated on developing its bulkhaul train-load services for a limited number of high-volume industries such as coal, steel, aggregates and chemicals.

The result has been that carryings by wagon-load have slumped from 130m. tonnes a year to 40m. tonnes inside eight years. Almost exactly the reverse swing has been true for train-load business, where traffic has increased from 60m. to 160m. tonnes a year. In the last three years, total rail freight

carryings have not exceeded 177m. tonnes in any one year. So when a few weeks ago British Rail announced the appointment of Mr. Fred Pullin to the new post of Wagonload Planning Manager, it was a sign that a new attitude had hardened rather than appeared because the new thinking on wagonload services had begun to emerge, with a high degree of caution in 1972, when the first air-braked wagon service was introduced between Bristol and Glasgow.

Since then, £20m. has been set aside to build up the new service, which currently offers 24 daily services. Almost 80 per cent. of the traffic is simply heavy cargo from rail freight's existing bulk customers, whose needs cannot be entirely catered for efficiently in train-load services, with the remaining one-fifth coming in as new business attracted, it must be assumed, from the roads.

Two main advantages flow from the air-brake system: it is speedy (the trains have a normal operating speed of 60 mph) and, because it is linked to British Rail's successful real-time computer system TOPS, it is extremely reliable—better than 97 per cent. of transit occurring to customer satisfaction, says Mr. Pullin. British Rail's defence of its failure to moderate its wagon services earlier is incidentally, since TOPS came on stream in 1975.

of booty crows of gold may be no bad thing. The air-braked wagon service, providing a limited but saleable sliding sidings service for smaller consignments, is an example of how the more cautious approach can achieve results.

That said, there is some genuine cause for anxiety about the size of the freight investment programme. If, as British Rail would like, Freightliners is returned to its sole ownership in May's transport White Paper, and it is expected that it will be contributing a useful if not spectacular £1m. a year in revenue surplus by 1979. One of the reasons for this success is the close monitoring of performance on each service, where 60 per cent. loading is reckoned to be the minimum for profitable operation. A small number of services have been quickly withdrawn having failed to meet this requirement.

This projected expansion to a total of 4.2m. tonnes, in 1979, is of course dependent upon the system receiving a rolling investment input to allow it to take 700 new wagons a year up to 1981, involving a total capital outlay of perhaps £80m. at average £3m. a year may seem modest, but set in the context of a total freight investment budget of about £20m. (ap- parently the maximum deemed


possible by the Rail Board out of its frozen investment ceiling of just over £200m.) it is a substantial slice for a small part of the business.

The tightness of this investment outlook is very much to the forefront of the Rail Board's mind and it has already consigned to the waste paper basket a number of grand designs for a total re-shaping of the freight business, such as the late lamented Speedlink container service which, some rail enthusiasts believed, was the means by which rail could have finally squared up in a truly competitive battle with the road haulage industry.


Necessity has been the key to more modest ambitions and on past experience the absence indicates the impossibility of it breaking even, according to the Government target. The business is still primarily dependent on coal and steel carrying and both these industries have problems—one of productivity, the other of world demand.

It is likely that the Government, as is customary, will waive this target break-even date, although the deficit grant ceiling will continue to be lowered. What will happen to rail's investment allowance is less certain, although only an outright optimist could see any possibility of the Rail Board getting any part of the 50 per cent. increase it says it desperately needs in the next year.

It is curious, in a sense, that in the middle of this trough,



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RAIL

May's Transport White Paper should answer some questions about British Rail's freight future, in particular its relationship with Freightliners.

At any rate, the rail freight review is in progress, now well beyond its scheduled report date, which has been put back to the summer. For the present, the Board is unwilling to say too much about interim findings, but the outlines of the process can be guessed at.

In broad terms, British Rail seems to have two major goals in its freight strategy. One is to increase productivity; the other is to sell the virtues of the freight business to Government on a slightly altered basis.

To take the second point first, Mr. Peter Parker, the rail chairman, is trying to put across the message that rail freight is a key part of the present Government's industrial

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High-speed

The high-speed wagon service is said to be comfortably covering its allocated costs already in operation, and it is expected that it will be contributing a useful if not spectacular £1m. a year in revenue surplus by 1979. One of the reasons for this success is the close monitoring of performance on each service, where 60 per cent. loading is reckoned to be the minimum for profitable operation. A small number of services have been quickly withdrawn having failed to meet this requirement.

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Commodity	actual (1972—the last good year) million tonnes	Potential (2,000) million tonnes
Coal and coke	100	88
Iron and steel	35	65
Oil and petroleum products	21	27
Construction materials	23	61
Other traffics	18	39

Source: British Rail. 197 280

PROBABLY THE two most commonly held impressions of Britain's state-owned parcels services are that they are monopolistic and totally unprofitable. The first of these is entirely untrue, the second, happily, not wholly accurate.

In fact, the state-owned parcels carriers, the Post Office, British Rail Express Parcels,

Parcelling up the problem

Roadline UK and National Carriers have only 20 per cent. of the market, the lion's share of which is securely and increasingly bandied by companies' own account road fleets.

This 20 per cent. of the market, which represents about 350m. packages, is dwindling steadily at a rate of two or three per cent. a year. Faced with this situation, the four carriers have been, inevitably, forced to hang on to their custom by the only immediately effective means: keeping prices down.

Even underpricing, though, has not stemmed the drift towards own account. Partly, the explanation must be the attraction of the convenience of own account planning, but the feeling among the state carriers is that perhaps companies with own account systems are unaware of precisely what their in-house transport systems are costing. But the costs of switching back to public carriers in terms of running down assets and perhaps even re-planning production schedules, are too great to contemplate.

Solution

The signs are that we are a long way from a solution to the parcels problem. Some favour a new, streamlined state conglomerate, others would prefer two such bodies. Consideration of the problem exercises a variety of committees and there is still some support for the notion that parcels should be at the top of the agenda for the new national transport council, if it comes into being as a result of the White Paper expected in May.

All of this is somehow familiar and depressing. Another exercise in shuffling the pack of loss-makers to produce a demoralised, doom-stricken British Parcels. But looking more closely at the different carriers, there are signs of hope. National Carriers, for example, halved its losses last year by a combination of thrift, rationalisation and determined clarification of its goals. It decided that one way to hang on to customers (other than by the ultimately self-defeating underpricing option) was to lure them into a more specialised service, which would be more reliable.

Red Star Parcels Service, look at its record illustrating the potential without obscuring the difficulties of the rail parcels business.

Red Star began life in late 1960s. It is a premium parcels service which allows customer to bring his packs to a main-line station and buy on board a given Inter-City train, enabling his customer collect it at a pre-arranged time. In 1971, Red Star handling 1.4m. packages; last year it number had risen to 4m. as profits are very healthy indeed in fact so healthy that British Rail is reluctant to disclose them for fear of being accused of taxing the premium parcel customer to subsidise the use of the loss-making collect and deliver and ordinary "to call for" services.

According to Mr. M. Connolly, its chief parcel manager, Red Star prospers whatever the state of the economy: in periods of growth demand outstrips production and there is a surge of last-minute, urgent deliveries when as in periods of recession, stockists of, for example, motor spare parts run down stocks to reduce cash commitments and again force themselves into the Red Star, same-day deliver market.

Add to this a general move in manufacturing industry towards sophisticated, capital intensive machinery for which a missing spare-part can mean the loss of thousands of pounds worth of production and the value of Red Star can be appreciated.

Having identified this market British Rail has ensured that Red Star has been in the first place adequately promoted and reliable in operation. The service claims a reliability record of 99.5 per cent. and when a more specialised service, which would be more reliable, Red Star network by allowing

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FREIGHT TRANSPORT SYSTEMS V

Change likely at Freightliner

FOR THE second time in its 12-year life, the future ownership of Freightliners, the road and rail container carrier, is in doubt. Born in 1965 in a burst of British Rail pioneering, control was transferred to the newly-formed National Freight Corporation under the 1968 Transport Act. Now, following strong representations for a reversal of the 1968 move from British Rail and the rail unions, the Government is again re-considering the matter.

This will be one of the questions answered in the May White Paper on transport along with the parallel, though less hotly contentious, issue of who should own National Carriers, NFC's major general parcels company, which the unions again want to seek back in the arms of the Railways Board.

The signs are that no one other than the National Union of Railwaymen and the Transport and Salaried Staffs Association is spurring for a fight over National Carriers. The Freight Corporation thinks it is well on its way to solving the company's chronic problems of over-capacity and the Railways Board maintaining the lowest of prices on the issue.

This is not the case with freightliners, where a vigorous lobbying battle both inside and outside the Department of Transport is in train, if such a trial chance of phrase may be admitted. This is notwithstanding the fact that there is a body of opinion within the Department which thinks the whole debate pretty irrelevant to the principal issue of the company's performance anyway.

control, although it would settle for a 51 per cent stake. A short time ago, the Commons Select Committee which is looking into the future of railways was treated to the most spirited public presentation of the Railways Board case so far on the Freightliner question. The argument went like this: NFC has not allowed Freightliners to achieve its full potential because, by its nature, the Corporation is predominantly interested in backing the road haulage lobby. Typical of this lack of commitment is the fact that NFC's other companies have progressively used rail less and less for trunk haulage. NFC is even, it is suggested, keen to bang on to Freightliners to prevent it encroaching on the territory of its other road-based companies.

The positive advantages of rail-controlled Freightliners would be to make British Rail's freight package more comprehensive and thus more marketable and to ensure that Freightliners' rail needs are fully understood and provided for. British Rail can also add that its investment in Freightliners has been double that of NFC and the not unimportant fact that most Freightliners staff are members of rail unions.

Issues

On the Freight Corporation side, two powerful points are made. First that it would be folly to mess about with a company which is in the strongest trend of improved performance in its history and secondly that the marketing side of the business is more directly dependent on the road haulage (Freightliner depot to an intermodal distributor is customer) part of the operation. The rail haul, it is said, is essentially a wholesale contract, which needs to be partner into its increasingly efficient but not in itself a fitful push for expansion in need of sophisticated marketing.

Some of the arguments on the side of NFC and ideally, both sides overlook the fact that British Rail would like to take many of the differences of view evaporate anyway and that a

vigorous, profitable under-taking will make the books of both Corporations healthier.

The arguments also neglect in a way that is the most crucial consideration for the Government: which owner will win most traffic and make most money from the business. And here we enter the intangible question of which body would provide the best management. National Freight would say that its autonomous, satellite structure, with strong in-company direction is ideal and is what has pulled Freightliners up by its bootstraps. British Rail can add coyly that the man who is in charge of the business, managing director Cyril Bleasdale, is a life-time rail employee.

There is a danger of bloody-mindedness on both sides and although relationships between Freightliners management and British Rail appear to be very good at the moment, accusations about damaging lack of co-operation occasionally re-surface. From the taxpayer's point of view the most serious point here is duplicate investment (is it true, for example, that the railways' costly air-brake wagon service plans and international ferry train businesses could have been done more cheaply by Freightliners?). Equally, is it the case that Freightliners' plans to buy a real-time computer system is senseless when British Rail already has one? There are other difficulties too, though, such as the Railways Board's willingness or lack of it to increase track clearance on crucial lines such as London-Dover, which has inhibited Freightliners expansion. Apparently, one Freightliners route is subject to costly diversion because of just one low-clearance bridge.

It will not be an easy decision for the cost-effectiveness-conscious Mr. William Rodgers, the Transport Secretary, to make in May. He is not a Minister to order change where the status quo looks satisfactory, but there is no question that even this Maritime operates exclusively on a contract basis for the

needed to finance investment in expensive capital equipment, much of which will be worn out by the mid-1980s.

There is not a shadow of doubt, though, that Freightliners should and can make money. Half its business is now tied into maritime services (that figure includes Irish Sea traffic) and as the drift from general cargo handling to containerisation gathers strength, especially on short-sea routes the company is uniquely placed to ply between the ports and major inland cities.

There are still problems here. The line-clearance difficulties on the Dover route have already been mentioned and there are still a number of poorly sited terminals. Even one port terminal, that at Hull, is in close proximity because of heavy losses as a result of the port's failure to develop its container handling operations to a sufficiently great extent, although the wisdom of the closure decision has been questioned in many quarters.

One of the most profitable Freightliner operations, and to a certain extent a model for the future, is the twin Southampton-Maritime. Southampton Maritime was opened in 1972 on a port-side site adjacent to the massive container berths of Solent Container Services, a subsidiary of five shipping consortia. Over 65 per cent of the containers entering the 52 acre berth make the next stage of their journey by Freightliner and it is expected that handling 250,000 containers a year (more than a third of this year's Freightliner total) by 1978, after the switch of South African traffic to containers later this year.

It had been intended that Freightliners would actually take more like 80 per cent of the Solent boxes, but the two Japanese members of the consortium have so far shown themselves unwilling to commit their business to rail.

A hard commitment is necessary because Southampton operates exclusively on a contract basis for the shippers using Solent Contain-

FREIGHTLINER PERFORMANCE			
British Rail ownership—			
Year	Containers carried	Gross receipts	Trading Profit
1966	27,300	unavailable	unavailable
1967	108,500	£2.5m.	unavailable
1968	282,900	£6.4m.	unavailable
National Freight ownership—			
Year	Containers carried	Gross receipts	Trading Profit
1969	397,400	£10.7m.	£2m. loss
1970	489,100	£14.6m.	£0.6m. loss
1971	505,000	£16.3m.	£0.2m.
1972	553,500	£20.7m.	£0.4m. loss
1973	634,300	£25.1m.	£1.1m.
1974	681,800	£27.6m.	£0.2m.
1975	622,000	£31.3m.	£1m. loss
1976	717,000	£39m.	£1.5m.
		(unaudited)	(unaudited)

ers. Seven trains a day are run solely for the use of these companies. In this way, documentation and traffic co-ordination between customer and transporter is controlled to a fine degree and Freightliners does not run any risks, even seasonal, of running part empty trains as it does have to meet the cost of this happens. The Southampton-Maritime contract is worth about £5m. a year and is reviewed annually on a formula linked to the retail price index.

Southampton also has a conventional terminal, Southampton Millbrook, which occasionally takes overspill from Maritime and which, like other terminals, has its own fleet of tractors and trailers for the final point of delivery haulage. Nationally, about half of Freightliner customers give the company the road haulage part of the journey and half use their own vehicles or those of a regular haulier.

The general picture for Freightliners looks good. Volume increased 13 per cent last year and has continued to look healthy in the first two months of this year. Equally important, train capacity sold last year was up from 73 per cent to 79 per cent. A number of factors have contributed to this trend, but a significant one must be the company's new marketing organisation, with new regional controllers of market-log and a marketing man now in the top, head office team. Control and planning will also undoubtedly benefit from the services of the planned real-time computer.

Volume success, though, can bring its problems, as another NFC company, Roadline, has discovered to its cost in the

past few years and Freightliners' biggest challenge this year will be to maintain quality of service through what looks like being even higher seasonal peaks than in 1976. At some terminals there are simple storage problems, at others there are potentially grave equipment hazards. One of the greatest anxieties here is at the important Stratford, London, terminal, where a badly designed concrete base for the crane-bearing rails has crumbled and will take valuable months and £300,000 to rectify.

Attention

Attention will continue to be paid to the siting of terminals and further closures are a distinct possibility. At the same time, two mini-terminals at minor ports, Poole and Ipswich, have been opened and the possibility of re-opening the Plymouth terminal is being considered. In all, Freightliner now has 23 terminals, plus service to six port terminals and three privately-owned terminals.

Whichever of the state corporations is in control of Freightliners by the end of this year, it will have to accept a continuing investment drain not covered by revenue into the service. At least, one would guess, until the end of the decade. But if faith is placed in its future, Freightliners could still fulfil some of the great hopes invested in it when it was pioneered in the mid-1960s and, unlike British Rail's heavy industry dependent bulk train-load business, be a stable profit-earner even in times of recession.

Parcelling

CONTINUED FROM PREVIOUS PAGE

some parcels to be transferred between trains at junctions, great care was exercised to ensure that this regularity was not impaired.

The price the customer pays for Red Star is a premium of between £1 and £8, according to weight, on top of the normal parcels rate, which is based on distance, size and weight. The figures prove that for Red Star customers, the price is right and British Rail is surely right in seeking to tune its prices accordingly to the strength of the market, even down to differentiating between rates for different routes. This, after all, is precisely what the road haulier does in selecting whether a route is viable in the first place.

An interesting development of Red Star and indeed of the whole rail freight business is seen in the relationship between the parcels service and City Link, a haulage company which decided to link in with Red Star to provide a specialised, express door to door service using rail for the trunk haul and lorry for rapid delivery from station to final destination. City Link now has 20 main agents offices and 150 sub-agents and enables Red Star to link itself with air freight services. City Link is, incidentally, Red Star's largest customer.

Link-up

In the long-run, though, re-organisation is inevitable and the logical link-up would probably be between Rail Express and the Post Office, with rail continuing to provide a high proportion of the long-distance trunking for the bigger packages handled by National Carriers. One useful step forward will be taken if the Post Office breaks with tradition and introduces tiered pricing for its parcels service based on distance, thus bringing it in line with Rail Express. Perhaps too the general public (the one parcels sending group with no own account option) will have to accept a reduction in the number of despatch points for parcels. There will certainly have to be acceptance of considerably higher prices.

There are other hopeful developments: such as the use of high-speed Freightliner wagons to bulk together parcels for faster journeys and improvements in automatic sorting equipment. But these changes cannot alter the central point that if rail freight is to be subsidy-free, it must be allowed to cultivate the market which desires and is prepared to pay for its services.

Red Star also has a certain embarrassment over manning in that, especially where transfers are involved, it needs small gangs of men available for short periods: the very kind of uneconomic deployment of labour which British Rail is seeking to cut out. This problem would be less important if there were any comprehensive way of allocating costs to that service like Red Star, so that

a completely self-contained accounting system would be possible. This need to identify the profitable in great detail is central to British Rail strategy for both the freight and passenger businesses. In this particular context, it should be remembered that the parcels business as a whole has only been treated as a separate profit centre since the formation of British Rail Express Parcels in 1968.

The question is, though, can the successes of Red Star, with its emphasis on marketing and maintenance of clearly presented standards, point the way forward for the revitalisation of the parcels business as a whole? The rail Board's five-year target, excluding major reorganisation of the State parcels sector, is to cut the £20m. loss to £5m., by a process of gradual rationalisation and selected, small-scale investment in terminal facilities.

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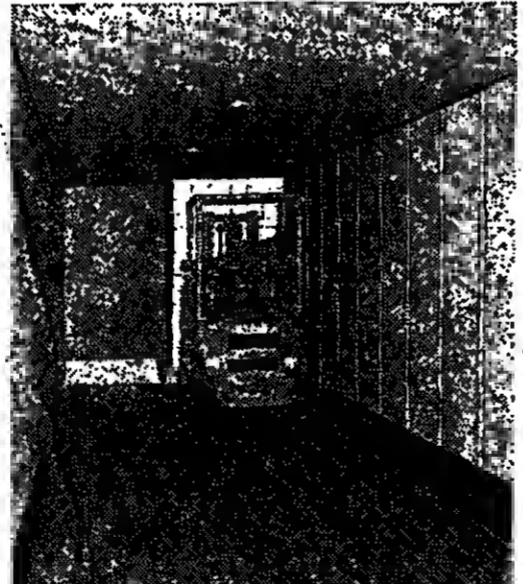
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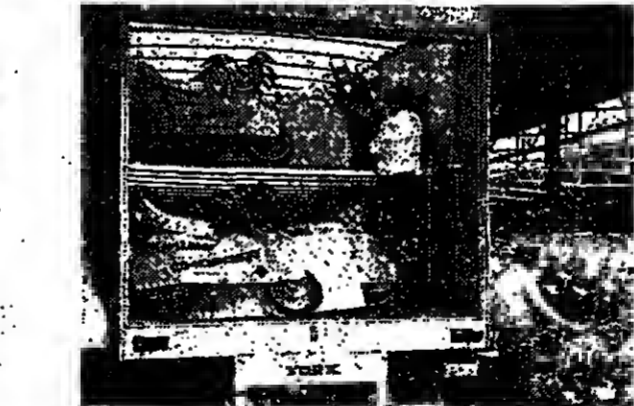


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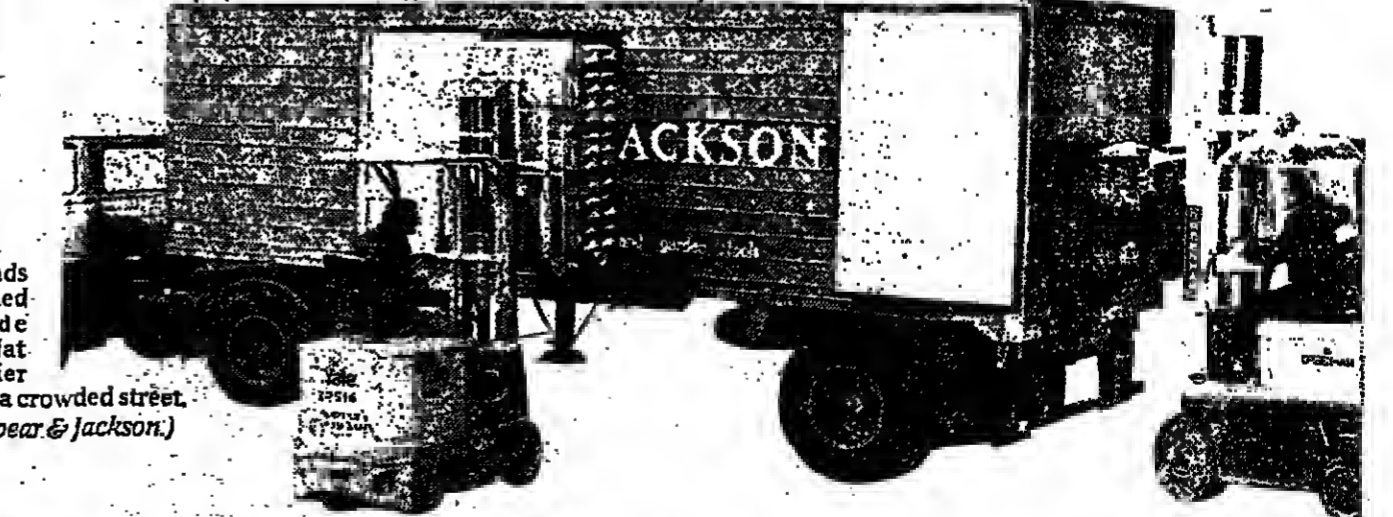
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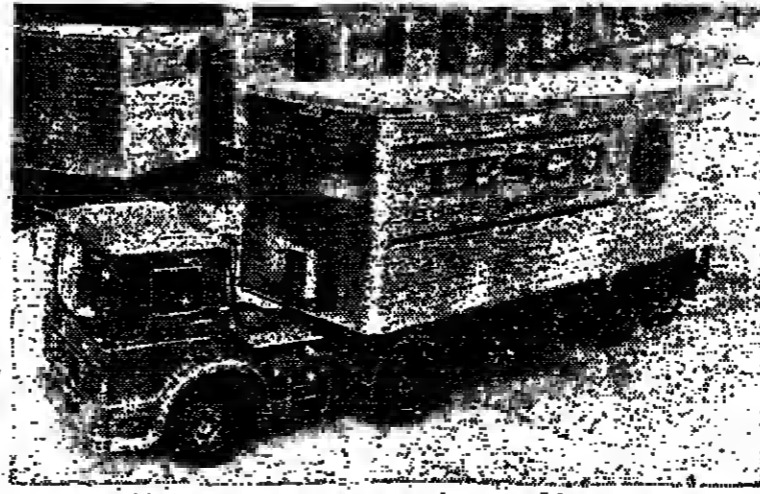
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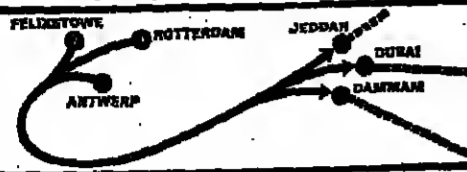
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Airlines able to play a greater part

AIR

There are some signs of a recovery in air freight although its potential is still far from being reached.

THROUGHOUT LAST year, there were some welcome signs that the world air cargo industry was moving out of the doldrums that affected it in 1975. Figures issued by the International Civil Aviation Organisation show that so far as the world's scheduled airlines were concerned, the volume of tonne-km. of cargo carried rose by no less than 13 per cent, to 21.6bn. tonne-km., a strong recovery compared with the 2 per cent growth recorded in the previous year.

While much of this improvement was due to the improvement in the overall economic climate in the Western industrial world, it was also probably due to a greater and belated awareness on the part of scheduled airline managements in a period of economic difficulty that they have hitherto largely either ignored cargo or relegated it to the backwoods of their thinking, with the result that it has not been making the overall impact on their revenues that it either could or should be making.

Be that as it may—and there is strong evidence for that belief—the improvement recorded by the ICAO covers only the scheduled operations of its member-State airlines. Not included in the figures are the carryings by the independent, or charter, freight operators, who have expanded world-wide their activities considerably in recent years, and now account for a substantial proportion of all the world's air cargo carryings.

Statistics are difficult to come by, but so far as the U.K. itself is concerned figures published by the Civil Aviation Authority show that in the six months to end-September, 1976, cargo carried on the scheduled services of U.K. airlines amounted to 336m. tonne-km. (up 0.9 per cent on the same period of 1975), while cargo carried by non-scheduled operators amounted to 303m. tonne-km., a gain of 3.2 per cent. over the

Reality

The second reason for the faster growth of the independent airlines themselves have overall tended to ignore the potentialities of cargo. Years ago, there was a phrase coined by the scheduled airlines suggesting that cargo was "the sleeping giant" of world air transport, and that, properly awakened and stimulated, it could provide a much greater proportion of the revenues of any airline, perhaps eventually even surpassing passenger revenues in ultimate importance on the balance sheet.

The answer is that it was lost in the multitudinous problems that overtook the passenger side of the business in the early 1970s—the need to buy new aircraft to keep up with the competition; the subsequent problems of overcapacity (too many seats chasing too few passengers); the soaring cost of fuel; the increasingly volatile environmental protests requiring substantial sums to produce quieter as well as more fuel-efficient aircraft; the increasing pressure for greater security; and pressures for cheaper fares at a time of steadily rising costs.

There are several reasons for this. The first is the much greater degree of freedom enjoyed by the independents in such matters as pricing policy. Whereas the scheduled airlines are obliged by their membership of the International Air Transport Association to abide by the rules of that body, the independents are capable of charging what the market will bear, and getting it, because of their much greater flexibility of operation which can often result in a better service than that provided by their scheduled counterparts.

There are some signs of a recovery in air freight although its potential is still far from being reached.

It is against the background of this situation that the independent airlines have moved in, and in recent years have achieved some significant successes where the scheduled operators have failed. In the U.K., the bulk of the non-scheduled air cargo traffic is carried by three all-cargo operators—IAS Cargo Airlines, Transmeridian and Trade-winds—and although the independents also have their regulatory problems with the Civil Aviation Authority (often devised to try to protect the scheduled carrier against non-scheduled competition), they have nevertheless shown a much greater spirit of adventure in attracting freight than their scheduled counterparts.

To some extent also, however, the problems of the scheduled airlines have stemmed from the international regulatory nature of the industry. Many of the problems of the scheduled industry, on the passenger as well as the cargo side, have stemmed from the admitted malfunctioning of the current system of international regulation. In many cases, relating to both passenger fares and cargo rates, this system has worked to the detriment of the scheduled airline industry. On the passenger

side, an example is the frequent refusal of the U.S. Civil Aeronautics Board to approve (after the last moment) new rate structures agreed previously by all the airlines through the normal rate-making machinery of the IATA. On the cargo side, a classic example currently prevails with the efforts of British Airways to introduce a new system of cheap contract rates on the North Atlantic for bulk cargoes, against persistent rejections by the Civil Aeronautics Board.

These failures of the regulatory machine as it applies to the scheduled airlines will be the subject of some discussion at a forthcoming meeting of the International Civil Aviation Organisation in Montreal from April 13 to 26. This Special Air Transport Conference—the first by ICAO for over 30 years—has been called to discuss many of the problems currently plaguing the whole of world air transport, and it is hoped that as a result some new international government mechanisms for the control of civil aviation may emerge.

In the meantime, the U.K. in its own right as a major user of air transport, is holding discussions with the U.S. on a new "bilateral air agreement," in which cargo is likely to figure strongly. It is hoped that by the time

the current Anglo-U.S. agreement runs out on June 22, this year, a new agreement will have been reached that will make both passenger and cargo services between the two countries much freer than at present. In the meantime, the air cargo industry continues to develop slowly. One of the major problems standing in the way of this expansion is lack of awareness on the part of many responsible people in industry and commerce of the financial benefits accruing from a judicious use of the aeroplane as a means of distributing goods. The emphasis is on judicious, for manifestly the aeroplane, at least as yet, and except in the case of certain non-expensive emergency situations—is not an ideal vehicle for the transport of large quantities of commodities such as wheat, rice, or oil.

But there are many other areas of industry in which the aeroplane, properly employed, can be used substantially to reduce manufacturers' costs or easing cash-flow problems by shortening the pipeline between the input of raw materials and the sale of finished consumer goods, resulting in quicker turnover of capital. For many in the U.K., the aeroplane, and air cargo, is something to be viewed with suspicion, and it is the task of the air transport industry, scheduled and non-scheduled alike, to try to break down this attitude. The expansion of air cargo, in fact, is not just a question of providing the right aeroplane at the right time and place and at the right price. It is a matter of re-educating shippers, industrialists and others currently imbued with the comfortable conservatism of traditional methods of distribu-

tion. It is an exceptionally difficult task. No-one seems to want to do it outside the industry, and so it is incumbent upon the industry itself, scheduled and non-scheduled sectors alike, to undertake it for themselves. The independents, so far as the U.K. is concerned, seem to be more successful at it than the scheduled airlines, although there are signs that some scheduled airlines are now devoting far more attention to the problem than they did hitherto.

Advice But the fact remains that despite the wide range of services available to the would-be shipper, and the large volume of advice waiting to be tapped, there is still a long way to go. Many governments, still need educating in the merits of air cargo. The passenger has so far won the day because he is articulate, vocal and not afraid to express himself if he feels he is hard done by in the quality and quantity of services he is offered. Air cargo (apart from the shippers themselves) is inarticulate and unable to bring to bear the same volume of protest against the inequitable treatment meted out to it. In the form of inadequate facilities and comparative disdain. And yet, everyone in the aviation business accepts that as yet only the surface of air freight potential has been scratched. The sleeping giant has yet to be fully awakened, and exploiting his untapped potential is one of the greatest challenges facing the world air transport industry to-day.

Michael Donne Aerospace Correspondent

Improving handling facilities

ALTHOUGH THE air cargo industry can be regarded as a prime candidate for the exploitation of the low status accorded handling goods, it cannot be said so far to have made significant progress worldwide in this field. While there are some notable exceptions—and the U.K. in general and British Airways in particular are working hard to improve the cargo handling facilities at Heathrow—in general terms worldwide the industry can hardly be said to be in the vanguard of new thinking. This is another reflection of the low status accorded to air cargo compared with that accorded to passenger traffic, in the thinking of many airlines at Boardroom level.

Far too frequently round the world it is still possible to find cargo relegated to old, inadequate buildings in some remote corner of the airport, with insufficient and in some cases antiquated handling equipment, inadequate customs facilities, and none of the advanced techniques that are increasingly being applied to passenger handling. It is reasonable to ask why, if a passenger can arrive at an airport, be processed through ticketing check-in, passport, customs and security controls, and be aboard the aircraft and away in, say, an hour or so, cannot the same treatment be accorded to all goods, regardless of size, shape or value? Certainly, many of the major airlines can and do provide reasonably swift handling of consignments for transport on scheduled flights, where those consignments can move conveniently in the holds of aircraft primarily engaged in regular passenger transport. But, by and large, it is only in a comparatively small number of the more industrially-developed, and therefore air transport-orientated, countries that hitherto any serious effort to promote the long-term development of air cargo are being made, and even in some of those countries it is not difficult to find areas of major dissatisfaction on the part of would-be shippers. What does seem clear is that the entire world air cargo industry now requires substantial injections of cash to enable it to equip with new all-cargo terminals, and with modern data-processing and computerised control of goods handling.

Some airlines are already taking positive steps to improve their cargo operations. In British Airways, as part of the recent radical reorganisation of top management, and the abolition of the former European, Overseas and Regional Divisions, Mr. Peter Pinfield has been appointed the airline's first-ever Controller Cargo, reporting to the new BA worldwide, Marketing Director, Mr. Gerry Draper. BA recognises that there have been difficulties in the past in integrating the former BOAC and BEA cargo operations, but it is the intention now to improve the entire cargo effort on a global basis. One of Mr. Draper's prime objectives is to build up an intelligence system throughout the world to find out what is happening to cargo marketing, as a first step towards BA's overall objective of securing a proper carriage return from the carriage of freight, and regaining the confidence and support of the customer.

Strides Another major European airline, Lufthansa, is also making big strides in cargo. The airline is building a new super-freight terminal in Frankfurt, due to be ready in 1980, which will have a capacity of 450,000 tons of cargo a year, and designed so that additional capacity can be added as needed. A new system for handling pallets and containers is to be built into the terminal, which will enable cargo items of different sizes (always a problem in automated freight handling) to be transferred to and from aircraft without difficulties. In London, Lufthansa also has a modern cargo terminal, opened in early 1966, which averages a turnover of about 75 tons a day, or about 25,000 tons in 1976. The London cargo centre is already partially automated, with provision for expansion as required.

Customs. The various parties, through Visual Display Units, are linked to a central computer which governs the system and takes the major decisions on how a particular piece of cargo is to be Customs-cleared. Information about a consignment is filed with the computer through a VDU, and the computer advises which of three standard procedures is to be applied for clearance of that item. One procedure, Channel 1, enables Customs officers to release a consignment subject only to a scrutiny of its documents—amounting for about 15 per cent. of all clearances. Channel 2 involves physical examination of the consignment, covering about 20 per cent. of the traffic. Channel 3, covering the remaining 65 per cent. of the goods, gives automatic clearance subject to about an hour's delay to give an opportunity for specific examination if any reason for this arises.

The advantage claimed for LACES is that it replaces much paperwork, and thereby speeds cargo clearance. Some airlines have evolved their own additional techniques for use with this system. Lufthansa, for example, has instituted a system whereby an unloading officer at an aircraft reads off details of a consignment into a small radio set linked to the VDU operator in the cargo terminal, who immediately feeds this information to the LACES computer, thus starting the customs clearance system even before the consignment has left the aircraft.

The LACES agreement with the National Data Processing Service of the Post Office is due to end in September, 1980, and work has been under way for some time to determine the future facilities for air cargo processing at Heathrow and probably also other airports throughout the country. A working party set up to study late last year that by the early 1980s, the Customs service in the U.K. would have its own computer system for entry processing of goods, while many individual airlines and cargo agents would also have developed to varying degrees their own separate automated data processing systems. Thus, the working party concluded that there would be a likely requirement for a

special computer bureau to provide cargo processing facilities for those commercial users who did not have their own automated data processing systems, and a switching computer bureau, individual airlines and agents' computer systems, and other elements into a network that would enable a rapid exchange of information between all aspects of the cargo operation. It is envisaged that the computer bureau will be developed and financed directly by its users, while the switching system will be developed and funded by association of users who will contract to supply the service to constituent members. Steering Body is now drawing up the detailed statements of operational requirements to enable prospective manufacturers of the computer bureau and switching system to tender their ideas this year, with a decision to proceed on an agreed systems design likely to be taken in the latter half of the year. The overall objective is to ensure a phased introduction of these new facilities over the first three quarters of 1980, so that there will be continuity of cargo clearance arrangements currently provided.

Extensive Any more extensive development of air cargo in the long term, however, would probably have to go well beyond this. The linking of this new system at Heathrow on an international basis with similar systems in, say, New York, Paris and other major cities, might become necessary. This expansion could be carried even to the point where notification could be passed to a destination that a specific consignment had been despatched, with details of its shape, contents and value enabling some measure of pre-clearance to be undertaken even while the consignment was in transit. Long before this situation comes about, however, it is likely that individual freight forwarders (agents who collect freight from a large number of shippers and combine it into convenient containerised load for the aircraft concerned) will be installing computers of their own—some already have done

CONTINUED ON NEXT PAGE

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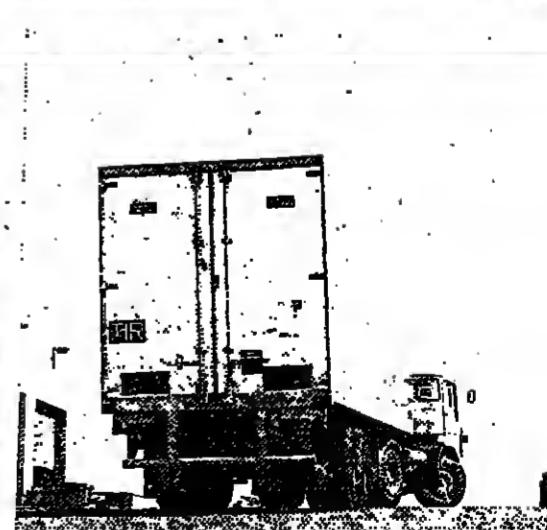
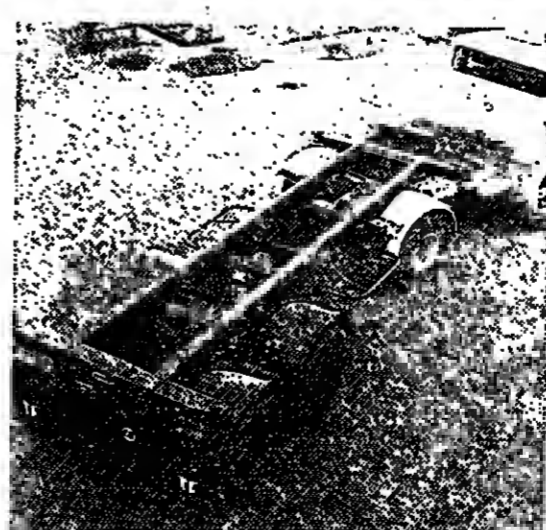
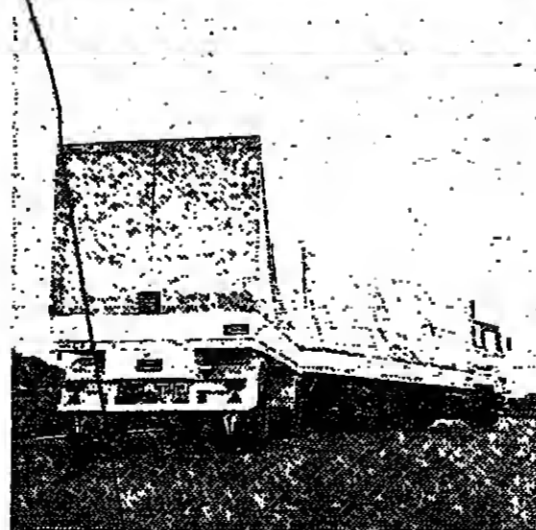
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IT IS now more than 50 years since road haulage became a competitive force in the freight markets of Western Europe and North America, which is time enough and more for any industry to have attained a measure of maturity. That it has done so has been demonstrated by the industry's performance during the last few years when the industrialised nations have undergone their worst and longest economic downturn since the 1930s.

Haulage rates may have been cut and some firms may have gone out of business; but there has been no evidence of the tendency to "overcapacity," "destructive and wasteful competition," or "instability" upon which the Salter conference (on Road and Rail Transport) commented so censoriously in 1933 and which has ever since been cited as justifying close governmental control over entry, capacity and tariffs in road haulage.

This is as true of French, West German and U.S. road haulage where one or more of these controls are still operated as of the Dutch and U.K. haulage industries where they are not. It is true that quantity in professional haulage, were lifted in this country only in 1966. But, as a study by Dr. Brian Bayliss for the Department of the Environment showed in 1972, the change from the old system of A, B and C licences to the present O licence system has made very little practical difference to the structure of stability of the industry, and it is unlikely that a similar study now would come to a different conclusion. Nor can one find any evidence of the "evils of overcrowding and unbridled competition" in Dutch haulage, which has been free of any significant quantitative controls for very much longer and whose substantial share both of the West German haulage market and of the Continental cross-frontier market might be thought to have made it especially vulnerable during a major business recession.

Entrants

The industry's resilience to economic misfortune can be attributed to a variety of factors. In the first place, it has benefited both in Western Europe and in North America from two or more decades of relatively uninterrupted growth and, in contrast to the situation before 1939, the bulk of that growth has been met by existing haulage businesses rather than by new entrants. Before 1939 the industry was relatively small and most haulage vehicles were owner-hauliers who had only one vehicle and who were therefore in a relatively weak position to withstand price competition and capacity reductions. In the 1950s and 1960s, on the other hand, the growth in business had led to an expansion of capacity by existing hauliers, not only in countries where entry was subject to governmental control but also in those where it was not.

As a result, haulage is a more concentrated industry than is generally assumed. The traditional view of the industry as a small-scale industry way to some extent still valid. In many countries, 75 per cent or more of the total number of firms operate five or fewer vehicles. But the vehicles have become steadily larger, they

carry more, they travel farther in a year, and they earn a much larger annual revenue. In ten years to 1974, the total number of goods vehicles in this country increased by about 10 per cent but their output in terms of ton-miles a year rose by 37 per cent while the EEC as a whole the road goods fleet grew by 43 per cent ton-mileage by 63 per cent.

Furthermore, there are now many more medium-size and large firms than there used to be both in the "own-account" and commercial haulage sectors (even without the extra impetus provided, in this country, by nationalisation). The evidence about the presence of economies of scale—is inconclusive, but medium-size and large firms now have a substantial share of the haulage market, especially in long-distance haulage and in the commercial haulage sector generally where the number of vehicles has tended to increase only slightly in the past decade. It is, moreover, misleading to think of the haulage market as either homogeneous or national; there are in fact an immense variety of demands for haulage services, differentiated both by geography and by the nature of the service that is sought. For this reason, in particular, one cannot judge the structure of the haulage industry solely in a national context.

The trend towards using larger lorries has of course provoked a reaction from those who express concern about the impact of vehicle noise, pollution, and vibration upon environmental standards. But one wonders what the reaction would have been if the same amount of freight were to be carried by the rather smaller lorries of yesterday and thus by a very much greater number of vehicles. Of the 17m. vehicles on Britain's roads in 1973 about 1.7m.—or 10 per cent—were goods vehicles and only 85,000 were "juggernauts" of 24 tons gross weight or more. Yet these 85,000 heavy lorries carried half of all road freight (that is, ton-miles) and accounted for only 15 per cent of total goods vehicle traffic (vehicle mileage). Indeed, the trend towards larger lorries has resulted in an overall decline in goods vehicle traffic in urban areas, the drop in lorry movements having more than offset the increase in van movements.

The growth in heavy lorry movements has tended to be concentrated outside the main built-up areas, and mostly on the inter-city motorway and trunk road network. This does not mean that suitable measures to minimise environmental damage ought not to be taken. A lot can be achieved by continuing to raise the standards of smoke emission, noise, and lorry engine design generally, by continuing to improve the road system so as to allow traffic to pass round sensitive areas, and by further improvements in distribution methods along the lines already developed by many summer goods manufacturers and

multiple stores. But one should not overlook the substantial improvement in the efficiency of haulage operations and the increasing professionalism of hauliers which has accompanied the trend towards larger lorries and which, in turn, has tended to increase the industry's resilience and adaptability to economic and market changes. These developments have been assisted by the imposition of steadily higher safety and environmental standards upon lorry operators both before and since the introduction of the present 'O' licensing system in the late 1960s.

Influenced

The increased professionalism of both commercial haulage and "own-account" operations has also been greatly influenced by the very substantial changes which have taken place in the demand for haulage services in recent years. This point has already been touched upon, but it needs to be brought out in more detail. The last 25 years have seen far reaching and, in many ways, dramatic changes in the branded foods and consumer goods industries. New products galore have appeared, new techniques of market analysis, promotion, packaging, and merchandising have been developed, and a wide variety of new consumer preferences and buying

Handling

CONTINUED FROM PAGE VI

such as accounting, for example, and the preparation of documentation. Moreover, the computerised handling of customs clearances is only one aspect of the need for modernisation in air cargo handling. Automatic sorting and loading techniques will need to be developed also, going far beyond today's fork-lift truck handling methods that are widely used. These will become easier to develop as more and more of the world's major airports follow the Heathrow and Frankfurt examples and install special cargo terminals in which provision is made for these techniques.

The point is that the entire world air cargo field offers immense scope for much new innovative thinking, on a scale comparable to that which has been applied in many aspects of the passenger handling field. One area where it seems the airlines could turn their attention with profit is that of sending small parcels by air—not necessarily items of high value but for which extra speed is required—such as spare parts, tapes, documents, tenders and similar items. According to the Air Transport Committee of the British Shippers' Council, it can cost as much as £70 for a single shipment sent by air freight for door-to-door movement, while

habits have grown up. This is an intensely competitive field, and both manufacturers and retailers need to respond quickly and efficiently. Over the same period there has been as marked changes in the pattern and organisation of distribution—the decline of the small general shop and the growth of the multiple, the supermarket, cash and car wholesaling, mail order, and count store and the suburban out-of-town "shopping" centre. Both for the manufacturer and for the retailer the things supply and the control of stock on the shelf and in the pipeline, have assumed major importance.

These changes have led to increasing specialisation in transport services, new techniques of mechanical handling and storage both on and off vehicle, and increased emphasis on reliability, flexibility, and responsiveness by carrier as well as upon speed and price. They have opened a demand for "all-in" distribution services, in which carrier undertakes to provide not just a transport service but a full range of storage, packing and billing services on half of the manufacturer's haul, in short, made the free trade between factory and warehouse a lotegral part of the whole distribution process. They also help to explain why road goods freight transport has grown so much faster than the inland freight market generally, not only in Britain but also in other comparable countries and why the industry today displays such greater resilience in adverse economic conditions.

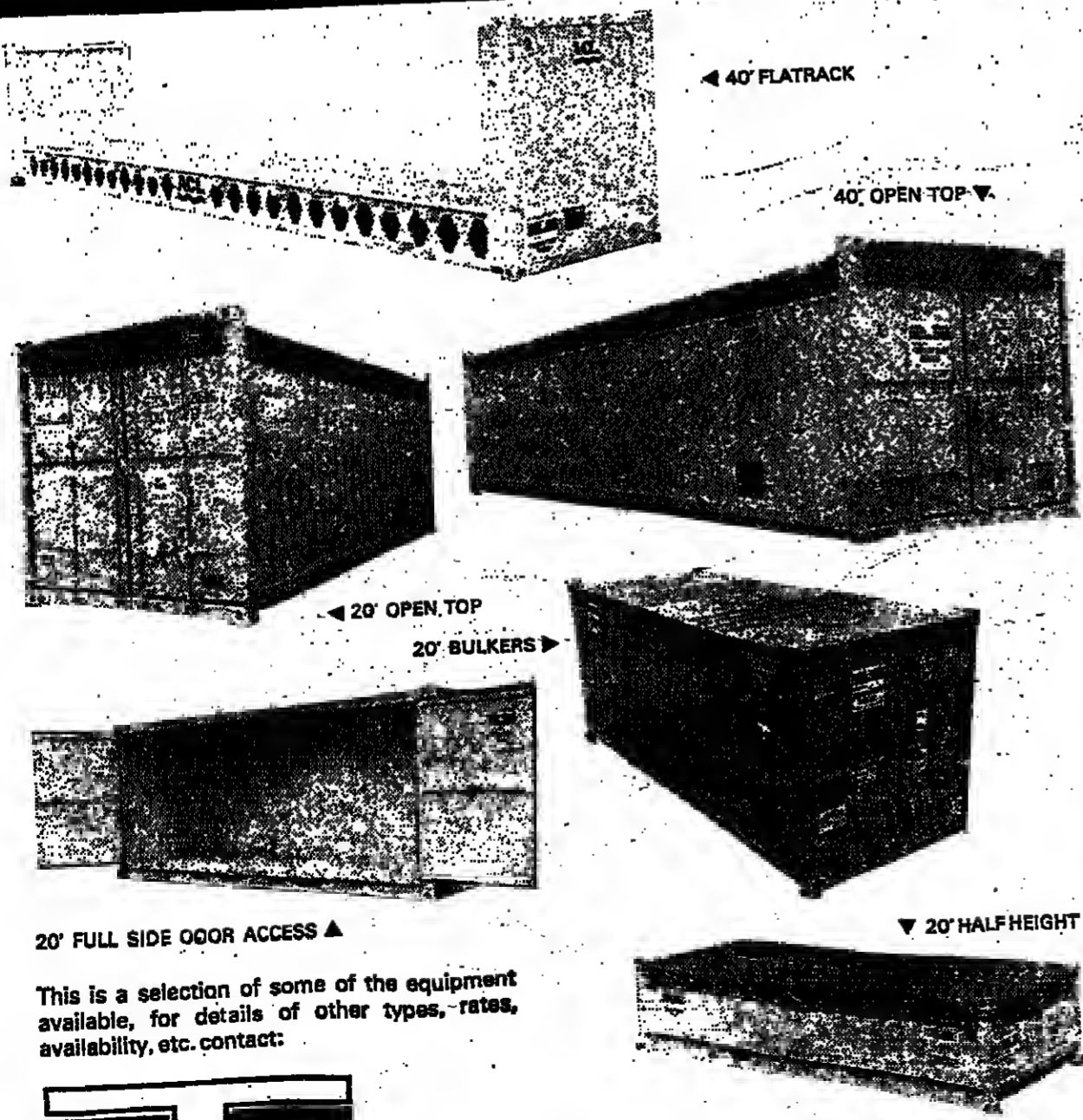
Mr. Clive Scott, the chairman of the committee, says: "The air freight industry has, so far, failed to provide such a service but the Post Office will be new and developing. Data is trying to fill the gap. Carriers should look into the problem now, and try to set up a parallel service, offering the minimum amount of import and export documentation, so as to give a price service. We would welcome evidence from as wide a range as possible to enable us to widen our knowledge of industry generally."

Michael De

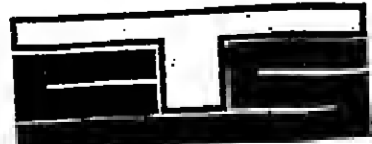
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FREIGHT TRANSPORT SYSTEMS IX

Lorry battle hots up

THE ARGUMENT over maximum lorry weights for roads throughout Europe is reaching a climax at the EEC in Brussels. For years the legislators have held out hopes of achieving standardised weights which would replace the present variety of regulations forced by different member states. This would reduce the problems for vehicle manufacturers faced with producing a number of different specifications, and would make it easier to enforce the law in different countries. At the same time it would bring a clearer indication of the requirements for road construction in terms of length and durability.

The history of road transport since the beginning of the century has seen a gradual, invariable increase in the weight of heavy trucks. Market forces have demanded heavier vehicles in order to achieve economy of operation. In the last few years, trucks were used for local distribution, but they came more and more to contend with longer distance journeys, after size and operating efficiency has been an increasingly important factor. At the same time, technical developments have given manufacturers the ability to make better and safer vehicles.

development there has been a continual conflict between the economic demands for bigger vehicles on the one hand, and the proper concern of the legislators to ensure that they are safe and do not pose a danger to other road users on the other. To-day these problems have been complicated by the further factor of the obvious environmental dangers posed by heavy vehicles. These result from their exhaust emissions, the amount of land which is needed for the motorways to run them on, and the noise they make.

Acceptable

Much of the effort of truck manufacturers in recent years, therefore, has gone into making heavy vehicles more socially acceptable. Brakes have been improved, engine noise damped down, and emissions reduced. In addition, the authorities have acted to reduce the hours that can be legally worked by drivers on the grounds that tired drivers are a potential accident danger.

A great deal of effort has also gone into making driving conditions more acceptable. The new generation of cabs which have been produced in Europe over the last decade sets much higher standards in driver comfort, with much softer and more

flexible seating, better designed controls and a range of extras such as radios and air conditioning. Engine noise inside the cab has been reduced at the same time to levels similar to those experienced in the average family car. All this has helped to make truck drivers more efficient and reliable on the roads.

The next generation of European trucks will inevitably reflect the same kind of practical considerations. Manufacturers will try to make their vehicles quieter, stronger, more efficient, and capable of carrying larger loads. But a big question mark still hangs over the pattern of legislation within which they will be forced to design the vehicles.

This will depend on the political reaction to a series of new proposals drawn up by EEC officials and now going through the process of discussion at ministerial level. What the EEC is asking for is a new blanket regulation for all Community countries which would impose a maximum vehicle loaded weight of 40 metric tonnes.

Adapting to such regulations would involve a great number of changes in the Community. Britain at present has a 32 ton gross limit (imperial tonnes), Germany and France 35 tonnes, while Holland and Italy allow

some vehicles of between 40 and 44 tonnes. Indeed, Italy only recently went up to the 44 tonnes level after losing patience with the protracted EEC talks, and other Governments have shown no great willingness to veer swiftly towards an overall solution.

The other main point of the EEC proposals relates to axle loadings on any one lorry axle. This is important, in terms of road wear, as the overall weight of the vehicle itself. Thus as a compromise measure the EEC has put forward the proposal that all heavy trucks should run on five axles (as opposed to four in Britain at the moment), so that the average axle weight will be only eight tonnes—at the moment it is more in some European countries.

The Commission package would also involve a slight lengthening of articulated vehicles from 15 to 15.5 metres, a measure mainly dictated by the need for extra cab space to accommodate sleeping areas for long distance drivers.

Supporters of the trend towards larger vehicles argue for them mainly on economic grounds. There is little doubt that, as long as the larger vehicles can be loaded to maximum capacity, the cost of carriage per mile is reduced by this method: it is more efficient on fuel to use one engine for a journey, heavy lorries take up less road space than two vehicles, and overheads on drivers and so on are reduced.

trucks, however, argue that they increase road wear disproportionately, along with other indirect costs involved in the road system. There is also a fear that these vehicles will get bigger—although if the new EEC proposals are adapted there will be virtually no change in the size of the present-day juggernauts.

In order to overcome some of these environmental fears, of the commercial, vehicle manufacturers will be forced, both by public and Governmental pressures, to keep up their efforts to make lorries more socially acceptable. One area in which this can be achieved is safety. Much work is being done at the moment, for example, on improving braking methods so that articulated vehicles can be brought to a halt without jack-knifing. The techniques being investigated involve the use of computerised systems which activate brakes on individual wheels as necessary.

Reduced

Another factor is noise, which has already been reduced substantially inside the cab, but is more difficult to damp down externally. And some manufacturers are even trying to-day to design their vehicles so that they appear less aggressive.

The pressure of rising oil prices are also beginning to prompt greater efforts towards designing more efficient engines. Over the last five years it is calculated that the cost of running a heavy truck has doubled. According to a recent analysis by Fodens, the heavy truck

manufacturers, fuel costs are only just second in wages and licence overheads among the total expenses incurred in running a heavy vehicle—fuel accounts for £5,050 for a 50,000 mile year as against wages of £6,300.

Because of these fuel costs, still rising rapidly, manufacturers have within the last year begun experimenting with methods of achieving greater fuel economy by better aerodynamics. Large trailers, for instance, have been fitted with frontal deflectors which create a smoother air flow round their bulk; and York, one of Britain's three larger trailer companies, has come up with a device for reducing wheel contact with the road in carrying light loads. This works by raising one axle, and is claimed to give significant savings in running costs.

The debate about future design will continue to be dominated by the problems caused by the swingeing increases in fuel prices. There has already been a considerable effort to reduce weight in the trailers pulled by articulated lorries, since to cut weight is the quickest way of producing better fuel consumption. There will be similar efforts on the rest of the vehicle.

At the same time, cost pressures are bound to lead towards greater support for larger vehicles among the commercial vehicle lobbyists. The way in which this battle is fought out will be one of the main issues for the industry this year.

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Continental complications

HAZARDS of international haulage for U.K. operators is often stated, not to say stated, that it is useful to remind oneself of the number of haulage companies going into the overseas market continues to increase. Unfortunately, no one is to print this trend clearly in the many statistical which will, unless it is undermined by many of the far-sighted road transport options now being considered inside the EEC. But one is agreed that there are more hauliers winning to international work and more frustrated from doing a variety of restrictions.

is the U.K. haulage industry sure, when it complains the restrictions on quotas for transit through a European country, and what sort of system it to see in its place. Italy, for example, there are who advocate the free-for-all open market, but the sagacious and lay-operators want nothing to do with a suggestion which certainly signals a price-war. At the moment, national haulage from Italy is based on far more—and the hauliers would be viable—tariffs than is the case in the rest of the market. It is this fact, others, which makes national work so desirable.

all that, Britain's transport operators have got problems and there is no that some changes to the would be of great benefit.

these problems, quotas is the most difficult to be positive varies from deal to deal, but at the of the complaints is the at for certain European countries demand for transit so far outstrips supply, restrictive regimes are many and Italy, although the Department of Transport said there would be a shortage of permits for and Hungary this year

ing this as a reasonable limit, although it is elastic to some extent in that hauliers who use the German railway's "piggy-back" service are granted extra road permits as a reward.

The problems this causes for British hauliers are obvious enough, but again they can be overstated. Mr. Brian Starbuck, general manager of the Kent-based Whitetrux, 85 per cent. of whose business is with the Middle East, says the £477 "piggy-back" fare from Cologne to Munich has to be set against over £300 in equivalent direct road costs. "If you take into account depreciation on the vehicle and the period of rest for the driver, I'd say there's not much difference in the costs," he says. This, it should be added, is the attitude of a man whose company has been on the waiting list for road permits through Germany and Italy for two years.

Mr. Starbuck's view is that the true professional will overcome the quota problem along with the quality of Middle East roads, lack of service facilities, obtaining of return loads and, not least, the weather. His evidence is that his company, which started its Middle East runs only 2½ years ago, last year carried cargo worth £32m.

Notwithstanding the Whitetrux success story—and others like it are not hard to find—the Department of Transport is taking very seriously the search for a more rational and indeed durable means of ordering the affairs of continental road transport.

The great goal, but elusive as a number of Treaty of Rome ideals, is the EEC multilateral quotas in the hope that eventual development when this principle was accepted, but the level of permits available (272 for Britain) has been frozen for two years, and an attempt to double the number this year has been vetoed by, unsurprisingly, the West Germans.

Britain continues to press for an extension of the community quotas in the hope that eventually it will relieve it from what is present is a never-ending round of bilateral negotiations, but at the moment multilateral quotas cover only between 5 and 10 per cent. of community lorry movements across frontiers. The operator who does have a multilateral permit has the right to ply without restriction across the frontiers of member countries.

So it seems likely that the haggling over haulage quotas will be a permanent feature of life in the community for many years to come, even though a newer and potentially even more contentious issue is welling up over the same problems of haulage competition.

This concerns the very basic question of haulage capacity in Europe, and there appears to be a growing feeling among some European Governments that in the end some form of capacity control agreement will be necessary, rather in the way that capacity is, at least to some extent, controlled on world air routes. This discussion goes to the very heart of the "dirigiste" versus free market debate over the future of European haulage, which has already been divided the Community

on a number of issues, and it is difficult to see how such a control system could be worked out in the absence of comprehensive statistics about intra-community haulage movements.

An even grander design, which certainly appeals to some of the Community, could involve a form of Community-wide taxation levied to pay not only for main trans-European roadways, but even, if they could be costed, to offset environmental burdens. This is certainly the kind of wider issue which Mr. William Rodgers, the British Transport Secretary, would like to have debated by his fellow European transport ministers, although there is little hope that the results at this stage would be anything more than academic. That such informal discussions have not already taken place is the result of a recent French refusal to take part in a London transport summit and is a further indication, if such were needed, of how lacking in harmony the community is on transport matters.

Argument

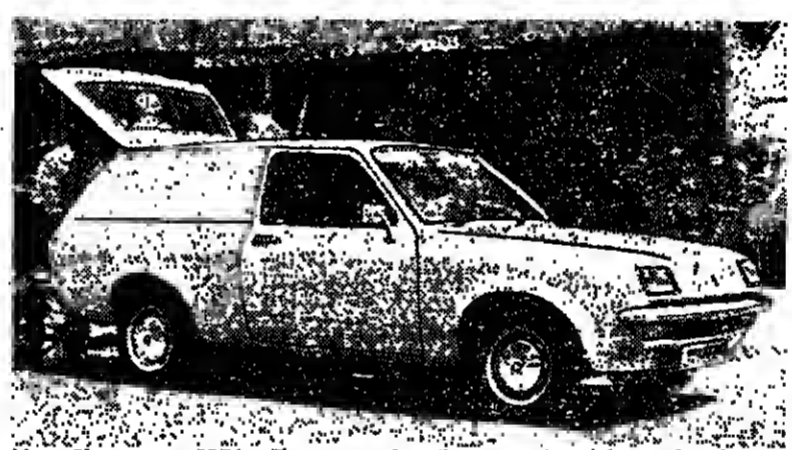
If we are to see progress in the foreseeable future on any of these important matters, it is likely to be in the context of some form of trade-off. British road hauliers tend to feel that Mr. Rodgers has his own input to such a bargain readily at hand in the form of agreeing to allow heavier, European-style lorries into Britain, but this argument neglects, as Mr. Rodgers does not, the very strong environmental lobby over the question.

Meanwhile, for the road hauliers, waiting lists for not life goes on and ways are found around apparent impasses. One increasingly popular way round the quota restrictions is to make arrangements with a Continental haulage business to take advantage of "co-operation permit" system, whereby return loads and extra quotas between countries are traded off. More ambitious, but increasingly common for bigger operators, is actually to buy a stake in a Continental business, thus circumventing quota, backloading and, to some extent, servicing problems in one move.

This latter option is expensive, if only because the French long-zone continental licence (giving freedom for trans-frontier journeys) is itself priced at over £2,000—in itself another instance of the inequality and complexity of road haulage conditions inside the community.

The British haulier, like any other British businessman, will not cease to grumble about the rise in ferry charges (up three times in less than a year), the road taxes (£800 per load through Turkey), the cost of breakdowns and the quotas. But so long as there is business to be won at good returns, the British operator will continue to jockey for a foremost place in European haulage. If he is to succeed, however, he will have to work for a long time to come in a market where conditions never seem to get simpler.

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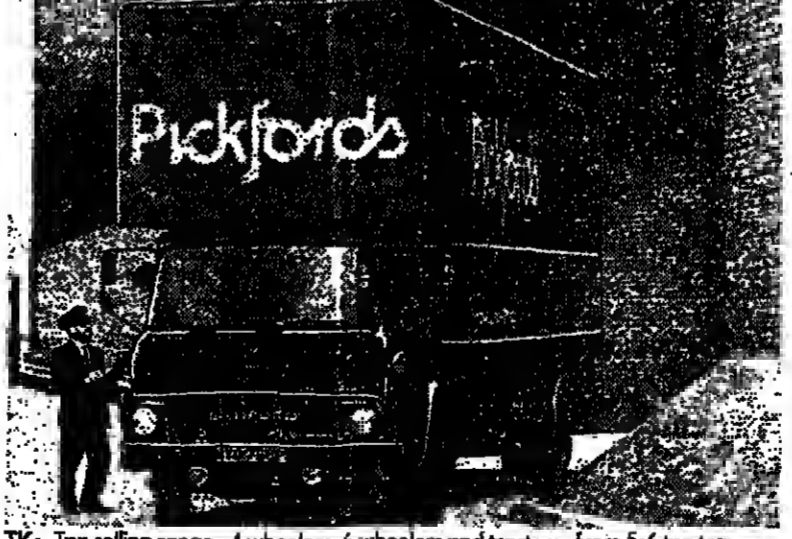
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ne can fairly question the of the case of, to take ample, West Germany, e country contains a r of key routes to the East (where over 7,000 rries will be heading dur- 77). It bears a heavy mental burden. take matters worse, Ger- has a sophisticated and loss-making railway net- which is short of freight, highly disciplined road industry, which is the e in the Community abiding by a bracket stem designed to ensure y of income for its s. The result is that bauliers can, for in- undercut a German rival to £100 a load for a Ger- port load to Britain, with suit that the German to Britain is almost as the Golden Eagle. The Germans already make permits available to hauliers each year and be forgiven for regard-

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FREIGHT TRANSPORT SYSTEMS X

Container progress

LATER THIS year when the Europe-South Africa trade is containerised, the culmination of nearly 10 years of planning, one of the world's last major trade routes will have forsaken conventional cargo handling for a system that represents as important a change in transport methods as the change from sail to steam.

The concept of containerisation is not particularly new. Way back in the 1930s a Royal Commission on Transport was reporting that greater progress could be made in the use of containers because of the two advantages of minimising the risk of damage and reducing the costs of handling. "The great advantages of containers," it suggested, "are so obvious that it is a matter of some surprise to us that they are not more generally used." Not for the first time a British idea had to wait for American enterprise before it could be realised.

An American road haulage contractor started taking cargo in containers by sea in 1956 between New York and Puerto Rico. But it was another nine years before Malcolm McLean started the conservative world of shipping by announcing that he was putting container ships on the trans-Atlantic trade. He began a decade of hectic activity which has seen nearly all the major trade routes gradually transferring to some form of container system and which by the early 1970s, at least, had established McLean's company, Sea-Land, as the largest container operator in the world.

Impressive

But the U.K. has hardly been a sluggard during the last ten years and British operators and owners have built up an impressive position in the world's deep sea container business. By 1978 the U.K. will have more deep sea load-on-load-off and cellular capacity actually in operation than any other flag. Currently the U.K. is lying second to the U.S. in terms of capacity in operation—it is judged in Twenty feet Equivalent Units (TEU), the size of the standardised small containers—but Brito has far more TEU on order. Figures produced by the Containerisation International Year book 1977 exclude barge carriers—which are almost all under the U.S. flag—and pure through-deck roll-on/roll-off vessels, but they show the U.K. with 71,254 TEU in service and another 17,581 on order, totalling some 88,835. Against this the U.S. aggregates some 82,852

TEU, of which 75,600 are in service and 7,162 on order, while in third place Japan totals 61,317 with 57,302 in service and 4,015 on order.

Half the fleet currently in service flies a U.K., U.S. or Japanese flag. But West Germany, France, South Africa and the Soviet bloc countries, which currently control less than 20 per cent. of the world deep sea container fleet, have contracted more than half of the capacity which is either under construction or on order for delivery by the end of 1978. West Germany is increasing its container fleet by nearly 50 per cent. to some 60,163 TEU. 40,335 are in service and 19,828 are on order. At the same time the French and Soviet-bloc fleets will be more than doubled in the next two years. The containerisation of the North Europe and Mediterranean-South Africa route means that the South African flag line, Safmarine, which controls about 40 per cent. of South Africa's deep sea shipping, will propel the country into 13th position worldwide from nowhere by the end of 1978 with 11,940 TEU.

By the end of next year the deepsea container fleet will amount to some 528,000 TEU of which more than 60 per cent. will be controlled by the U.K., U.S., Japan, France and West Germany.

Major developments are also taking place this year on the trade routes to New Zealand, but by the end of 1978 most major trades will have been containerised. It started out with the North Atlantic and North Pacific routes but these have now been joined by Europe-Australia, Europe-Far East, Japan-Australia, Europe-New Zealand, Hong Kong-Australia, New Zealand-Japan and finally Europe-South Africa. The investment in containerisation has been colossal running into many billions of pounds and the development of the principle must now have reached something of a watershed because it cannot be easily grafted on to the facilities offered by developing countries. The system depends on maximising a vessel's earning power by cutting down port time and waiting time for Containerisation International Year book 1977 exclude barge carriers—which are almost all under the U.S. flag—and pure through-deck roll-on/roll-off vessels, but they show the U.K. with 71,254 TEU in service and another 17,581 on order, totalling some 88,835. Against this the U.S. aggregates some 82,852

SHIPPING

Constant changes in the pattern of sea trade and in methods of handling goods have added to the problems of effective planning.

Nine years ago the South African Government commissioned a report to study the future pattern of its sea trade, which two years later recommended the adoption of containerisation at the earliest possible date. It was not until 1974 that the South African Government and the Europe/South Africa conference, the self-regulatory agency which monitors and establishes freight rates for common carrier shippers on the route, signed an agreement to containerise trade by 1978-79. The sophistication of the planning and execution of the operation explain graphically the difficulties of transferring the system to developing and underdeveloped countries.

The recent development of the trade provides a salutary example of the great uncertainties facing the planners. Unexpected changes in the trading pattern between South Africa and Europe over the last 18 months has caused the conference lines to revise downwards the number of container vessels destined for the trade, because of the great fear of having a surplus tonnage built into the service. Trade has not grown as fast as expected, forcing the lines to cancel their order for the planned tenth cellular vessel for the North Europe service end to postpone indefinitely any decision on ordering

to cargo and reduced insurance premiums because of the smaller number of handling operations. The main U.K. participants in the South Africa trade, Associated Container Transportation and Ocean Containers Limited, are hoping that the relatively late arrival of this trade in the new cargo era will allow operators to draw on the many lessons learned during the setting up of the Australia route and thus to avoid many of their mistakes. Overseas experience is vital for the South African programme involves the handling of nearly 500,000 full containers on the deep-sea trades by the end of 1978.

It has been a long process. In the coming months the container route from Europe to New Zealand is being expanded as OCL follows Associated Container Transportation Australia in developing a full container service. ACTA which decided to push its container service on from Australia to New Zealand in 1972 has since tried to

increase its penetration of the conventional cargo market and placed orders for two more container ships in 1974, both of which should enter service this year. The Middle East trade is also being progressively containerised, but it is not being organised on anything like the scale of the South African trade and is developing piecemeal. As one example of these developments Cunard Steam Ships is investing well over £25m. in the next four to five years building up a new Arab road haulage operation linked to an expanded container shipping service to Saudi Arabia.

At the end of last year the company said that its six-monthly service to Jeddah operated under the banner of the recently formed Cunard Arabian Middle East Line had proved so trouble-free that the company had decided to charter two more specialised container and ro-ro ships in cope with future buoyant demand. Trade through the Middle East has also been boosted by the decision of the leading container lines operating between Europe and the Far East to route their ships through the Suez Canal. It took nearly 12 months of tense negotiations to persuade the two main con-

panies involved in the trade, the Trio and Scan Dutch groups, to abandon their use of the Cape route. The sailing time between Europe and Japan could be cut by about seven days if vessels maintained their previous speeds so the lines must slow their ships down if they are not to produce a tonnage surplus.

An alternative to the Canal is being pushed by the Zim Israel Navigation Company which involves hitch-hiking containers by road across the Redem land bridge from Haifa/Asdod to Eilat. Last year Redem, the Zim subsidiary carried 3,500 containers amounting to some 80,000 tons between Israel's Mediterranean ports and Eilat. The service owes its existence to the closure of the Suez Canal in 1967 and it carried on after the 1974 re-opening because most Canal traffic continued to be conventional cargo.

Despite the recession from the freight boom of 1974 most container ports have shown improved flows in the past two years. But this has often been at the expense of traditional breakbulk cargo, which as a whole has declined. The movement to containerisation has continued at sufficient pace to ensure a continued worldwide rise in traffic. The U.S. handles the biggest quantity of traffic, 5.8m. TEU in 1975 of which New York accounted for some 1.6m. It is followed by Japan with 1.9m. and the U.K. with 1.5m., but Rotterdam rates second place among the leading ports accounting for just over 1m. TEU in 1975. London was the leading U.K. port with a little over 260,000 containers. Over the past 10 years the container revolution has stolen all the headlines, but it is salutary to remember that container ships still account for only a tiny percentage of the total general cargo fleet in the world, as little as 2 per cent. according to Maritime Transport Research, the research arm of the Shipbuilders and Repairers National Association.

In mid-1976 general cargo carriers accounted for 96 per cent. of the fleet in terms of numbers and 88 per cent. in terms of gross tonnage as against the 9 per cent. of tonnage taken by cellular container ships—2 per cent. in numbers—and the 2 per cent. for ro-ros. Even looking at the ships on order at the time cellular containers could only manage 11 per cent. in gross tonnage against 79 per cent. for general cargo vessels.

MTR predicts that Japan's impact on the capital goods trade in the late 1970s and 1980s is likely to be as strong as its attack on consumer goods in the 1960s. With the increasing exports of plant and equipment many more heavy ships will be needed in the Pacific. Japan is expected to supply half of all the part-vehicles shipped by sea in 1985.

No single developing country says MTR, is likely to match Japan's impact on the ship market but by 1985 the largest developing country should together constitute economic unit big enough to significantly alter current patterns of trade.

The provision of modern facilities is expensive, a citizens of Bristol will be discover during the next few years as they are faced with the need to pay off the loans for the development of the new Bristol West dock, which should begin to be used in the next few years. The city will probably be the last enclosed dock, on a green field site, in British port will ever be. It was conceived many years ago before the onset of a current trade recession, a designed to cope with the generations of cargo liner dry bulk carriers up to 10,000 tons.

The city faced a long with successive governments the 1960s to obtain permission to build the dock, and will

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Ports prepare for the next generation

IN THE past 20 years the demands that have been made of ports have changed more dramatically than ever before, and with unprecedented speed they have had to absorb the impact of several influences. From the development of air transport, the decline of the coal trade, new ship technology, road transport, revolutionised methods of materials handling and modern communications techniques.

In less than ten years 82 per cent. of Britain's general cargo trade with Europe and Ireland has been utilised and 26 per cent. of the deepsea trade, according to figures published by the National Ports Council. The revolution has not been merely confined to containers but takes in various other means of bringing together mixed traffic from the use of pallets, to lorries and trailers, and packaging, as is the case in the timber trade. Such changes have led to the transfer of traffic between ports and above all the concentration of traffic at particular ports at the expense of others. The need of the new generations of large container ships, which are extremely expensive to build and operate, to save time both in port and while steaming has become a major consideration for the container ports. Entirely new facilities have had to be created and located, and the process has led to the wholesale loss of traffic from some ports to the benefit of others, particularly Southampton.

Apart from containers, the trades with Europe and Ireland in particular have been influenced by the advent of roll-on/roll-off vessels. Theoretically ro-ro berths have a lower capacity than a container berth, but they are both cheaper to construct and require fewer men. The major impact on the ports industry to arise from the seemingly endless permutations of size and specialisation of ship has been the constantly changing pattern of traffic.

Rather than leading to a need for greater specialisation of port facilities some developments are obviating such facilities altogether. One far-reaching innovation is the use of refrigerated containers and lorries, which remove much of the need for cold-storage facilities in the port.

Road transport developments have emphasised the impact on ports of ro-ro ships, which have created both new passenger and new freight traffic at several ports. The volumes of traffic have clearly been concentrated on the trades with the main continent of Europe, Scandinavia and Ireland, but ro-ro services are spreading wider and wider, with services now operating to North Africa and the Middle East. The effect has been that what in some cases might have been considered by the ports industry as deep sea traffic has now been converted into the shortest of short-sea trades, which has again brought a substantial transfer of traffic between different ports. Lorries and trailers now reach the U.K. from as far afield as the Balkans and Spain, by the short sea route, and exports are sent in the other direction by short-sea routes and road to the Persian Gulf, Afghanistan and West Africa.

The advent of ever larger ships for the transport of oil and the consequent development of pipelines has brought into existence entirely new ports or has radically developed

small existing ones to meet the demands of the oil industry. Milford Haven, for example, by tonnage handled has become the biggest British port, with four refineries and their associated jetties. Most significantly one terminal is connected by a 68-mile pipeline to the old-established refinery at Swansea, this solution proving cheaper than rebuilding the port at Swansea. The oil industry is also in the process of creating new important ports at such places as Sullom Voe in the Shetland Isles and Scapa Flow in the Orkneys. And the massive increases in ship sizes are affecting other bulk trades in similarly dramatic ways. When the current programme of new ore terminals for the British Steel Corporation is completed new ports will have been created at Port Talbot and Hunterston and there will have been massive transfers of traffic from six other ports.

But the implications for the future go further. The National Ports Council's bulletin, Port Perspectives, points out that development work is well advanced on the construction of solids pipelines, which could again dramatically change the pattern of present trade.

One system already in use, though not in Britain, is the loading of ships with a mixture of slurry and iron ore which is handled in part as a liquid through a pipeline, which can then continue directly to the steelworks, replacing the cranes, conveyor belts, storage bunkers and men required to handle it in liquid form. Theoretically it should also be possible to handle other solids as slurry, and sulphur, sold at

normal temperatures is being liquefied by heat handled in this form. A further possibility is the development of large pneumatic "capsules" of cargo, and port's role is also being replaced in some instances by the reduction of barge carriers, which can then be towed to miles inland. LASH (lighter aboard ship) services were introduced between European ports and the Gulf of Mexico some years ago, but the potential has been tended by the introduction of services from Europe to the Sea and the Gulf, with the various heavily clogged Quaysides can be used to inaccessible to ocean-going vessels.

CONTINUED ON NEXT PAGE

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FREIGHT TRANSPORT SYSTEMS XI

Tanker demand may begin to pick up

CAREFUL optimism has been expressed in recent weeks that a world surplus in tankers will disappear by 1980, several years earlier than the best previous mada since the end of 73. Not only have there been announcements in New York and London... Mr. Ravi Tikoo, the London power, of his intention to... Each ship would be about 600,000 tons dwt among the largest in the world.

Industry Forum, the organisation set up to try to stem the enormous losses projected in the tanker industry. This debt was outstanding on oil tankers which had little prospect of profitable use over the next two to three years and the figure could well rise to \$10bn. by 1980. The burden of this debt falls mainly on independent tanker owners who account for nearly 66 per cent of the world's fleet of tankers and bulk carriers. Much of the impulse behind the speculative ordering boom up to 1974 came from the independent owners, which resulted in the total tanker tonnage on order at the end of 1973 amounting to 95 per cent of the existing fleet, and fostered the belief among world shipbuilders that capacity could be expanded indefinitely.

Looking at the massive burden of debt, Mr. Chase is of the opinion that liberal ship financing has been a major factor of the tanker depression and was providing a subsidy for shipbuilding of which the taxpayer was oblivious. He argues that if credit was limited to 60 per cent or even 50 per cent, against the 70 per cent currently available, it would be directly beneficial to shipowners. If their fortunes improve then in the medium and long terms the prospects for shipbuilders must also brighten.

Another banker, Mr. Otto Norland of Hambros, has warned that the use of over-generous credit terms as a sales tool for shipbuilders would be very harmful for shipping. Commercial banks would withdraw from ship finance if they saw this happening and would limit their involvement to lending against government guarantee or to a small number of top-class international shipping companies.

Over the past 18 months the IMIF has discussed various ways of extracting the tanker industry from its current slough. Much of the debate a year ago centred around the proposal to instal segregated ballast tanks in all tankers above 70,000 dwt. This would have involved the conversion of some of the oil tanker fleet's carrying capacity into tanks for the exclusive loading of ballast.

But a powerful body of opinion has emerged against this idea, particularly among Norwegian tanker owners, who have argued that cash revenues particularly from long-term charters would be adversely affected, and that anyway the measure would have only a marginal effect on the overall surplus. Other proposals that have emerged include the use of tankers for oil storage and accelerated scrapping, regarded within the IMIF as one of the more promising ideas, because it offers governments the prospect of some more work for the hardpressed shipyards.

The IMIF study group on scrapping concluded, after an examination of the likely supply and demand for various sizes up to 1980, that there would be a balance between supply and demand, or even a shortage, of tankers up to 100,000 dwt but that the surplus of VLCCs (200,000 dwt and above) would continue to be severe.

The IMIF suggestion for Government-sponsored scrapping and build policies to take account of the fact that a large proportion of the tonnage that has reasonable trading prospects by 1980 is 10 to 15 years old or more. The IMIF proposals would offer inducements to owners of this ageing tonnage to break up their vessels and place new orders. This idea, which at first sight appears more attractive to shipbuilders than owners, has been formed out of fears that governments may take steps which could increase the existing tanker surplus as a way of saving their shipyards. Or, more probably, government actions may create similar surpluses in other sectors of shipping through the encouragement of the construction of ships for which there is no market demand. Such moves could further jeopardise tanker owners, who are dependent on revenue from other sectors, such as dry cargo carrying, to service their tanker debts.

On the other side of the coin, H. P. Drewry suggests that with regard to tanker supply the fleet can be expected to grow from about 306m. dwt in mid-1976 to a little under 340m. dwt in mid-1978. In 1976 about 10m. dwt. were scrapped and this level is unlikely to be exceeded for a few years given the age of the fleet. At the end of 1976 there were some 40m. dwt. of new building on order. Thus beyond 1978 the size of the fleet would decline to a little under 330m. dwt. by 1980 and to about 260m. dwt. by 1985 unless new orders for tankers are placed in this period.

According to Mr. Carpenter: "The slight improvement seen in the tanker market in 1976 must not be taken as a sign that the worst is over. Those optimistic forecasts which are now being propounded should be treated with the utmost caution. Individuals, international organisations and governments must be made aware of the fact that there has been little fundamental improvement in this situation, and that a long hard road lies ahead before a truly healthy industry can re-emerge."

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Ports

CONTINUED FROM PREVIOUS PAGE

ially granted by the last Conservative administration, it is the understanding that the central government finance is involved. Bristol represents a cent of its confidence that once again build a place in the country's major but to other observers in the West Dock is to be the product of a revived civic pride. Dock developments lagged behind changes in terms of shipping trade, but other ports have been undertaking major projects without a feed customer at the end process. Bristol venture is entirely tentative, based on a belief that the port does not grow development of the whole will be jeopardised. It has its hopes initially on customers from the forest products and has built a forest terminal alongside with more than 100,000 sq. ft. of storage space in a single storey shed. But ideas of the dock will be undeveloped until customers are gained at a date in the future—the decision had to stop at some point. The National Council there will be a decline in the rate of

growth of total U.K. foreign trade in tonnage terms up to 1980, largely reflecting the reduction in imports of crude oil in the wake of the development of the U.K.'s offshore fields. Taking 1973 as the starting point, an annual rate of expansion of 0.3 per cent is expected up to 1980, although if rates are taken from the main recession year, 1975, the average growth rate per annum for the total foreign trade is expected to be 4.7 per cent. to 1980.

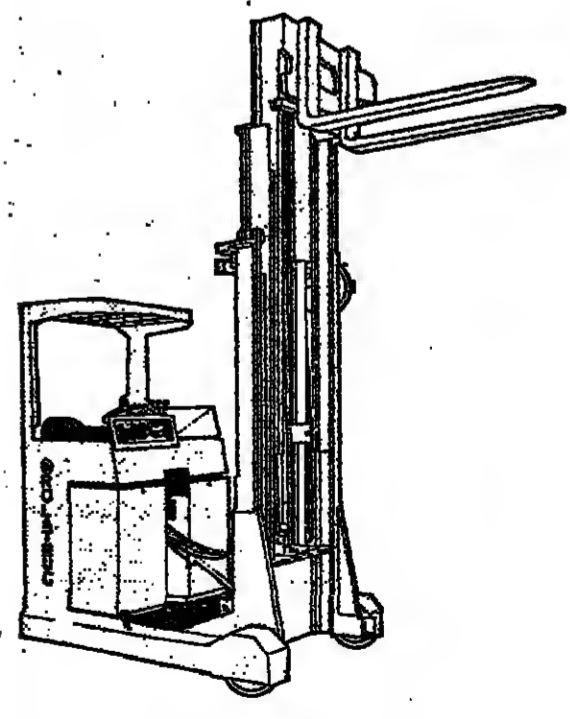
Pattern. By 1980 growth should resume at 3.2 per cent. per annum, reaching an annual total of 335m. tonnes by 1985, half of which will be accounted for by fuels. Non-fuel traffic is expected to rise by 2.2 per cent. up to 1980 and by 3.2 per cent. for the five years thereafter. The NPC is predicting an improvement in the tonnage balance of trade for non-fuel non-bulk cargoes. These export commodities are relatively high value cargoes and are set to grow by some 3.9 per cent. annually to 1980, while imports will grow at only 2.4 per cent. In the five years 1980 to 1985 these exports should grow by some 5.9 per cent. a year, compared with 2.9 per cent. for imports.

The geographical pattern of the U.K.'s trade has shown major changes under the influence of such factors as the enlargement of the EEC, the loss to competitors of traditional U.K. deep sea markets and the fall in the proportion of trade represented by bulk commodities. Between 1966 and 1973 the EEC's share of the U.K.'s non-fuel trade (excluding iron ore and sand and gravel) increased from 22 to 31 per cent, and this trend is likely to continue taking the Community share up to 37 per cent. by 1980 and 39 per cent. by 1985.

The utilisation of cargo will continue to affect the ports industry dramatically. Far heavier capital investment is required to produce higher cargo handling rates, a greater throughput and bigger ships, while at the same time fewer berths are required with greatly reduced labour forces—the dock labour force was virtually halved between 1965 and 1976. The period of sudden change triggered off by containerisation has now almost run its course, but what remains to be done is a far more exhaustive assessment of the various methods that can be adopted for handling containers and a greater understanding of the complex organisation that is necessary to make the system function at the peak of its efficiency.

K.D.

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FREIGHT TRANSPORT SYSTEMS XII

Insurance risks

THERE HAVE been plenty of problems for the insurance market providing cover for ships, aircraft and road haulage vehicles. On the one hand it has been necessary to provide very high capacity, so as to meet the peak values at risk. No underwriter, however, wants to write an unbalanced portfolio with the result that there has been very keen competition for the lower valued units. In many cases, it would seem as though owners have been able to secure cover at less than "cost price."

For marine underwriters, there has been the problem that there is not the same spread of risk as in the past. A comparatively small number of really large container vessels have taken the place of a relatively large number of cargo vessels. This, therefore, is a further problem in trying to achieve a balanced portfolio—particularly when one considers the high valued cargoes carried by container vessels, which will be insured to the same market as the hulls.

In view of the extensive changes in shipping methods, cargo handling, packaging, etc., it is not altogether surprising that traditional cargo insurance should have come under scrutiny. One area where present systems are being called in question concerns the overlapping (or dovetailing) of carriers' liability with "normal" cargo insurance.

In the past, shipowners carried almost no liability towards cargo owners in connection with cargo carried. They were able to exempt themselves in the contract of carriage from most consequences. The introduction of the Hague Rules put a limited degree of liability on the carrier, but they were not so alternative to a cargo owner

arranging cargo insurance. Lately, there has been plenty of criticism of the two systems "overlapping," and thus being unnecessarily expensive. Suggestions have been put forward that the shipowner's liability should be much wider than at present—which could reduce, or even eliminate, the need for cargo to be insured.

Marine insurers have criticised the suggestions. They feel they could undermine the free flow of sea-going commerce, add difficulties rather than remove them and be detrimental, rather than beneficial, to cargo owners in terms of cost.

Willing

The point has been made that not all cargo owners require the same degree of cover. Some may wish protection only on limited terms—if, for instance, they are willing to "run" the risk of extraneous losses. Frequently, individual cargo owners require insurance for a higher figure than the value of the cargo plus a percentage—charges which can arise for a variety of reasons. It has been pointed out that some carriers, especially combined transport operators with container services, which set out to provide a "full liability" protection, have had to admit that they are unable to provide the degree of flexibility which may be required.

It would seem impracticable to make a shipowner liable for loss of or damage to cargo during transit when it is not within his control and care. In almost all cases, however, the overall transit of cargo begins well before it arrives at the port warehouse, and continues beyond the warehouse at port of destination. Insurers say

that, if they are expected to give full cover for the "ends" and major British companies, is still the largest such market in the world. But there has been keen competition from many other quarters, with the result that, in some cases, London has felt obliged to write business at rates which it considered inadequate, or to let it go elsewhere—in the hope that it will return when the competitors have burnt their fingers.

In some cases, brokers quote two rates—one from the established market, and a lower rate from a more competitive market. At the same time, they point out that the security of the latter is not of such a high order. It is then for the owner to decide whether to take "cut-price" insurance in the knowledge that there could be problems over the settlement of claims at some stage in the future.

Underwriters' premium income has been reduced due to the depressed state of world trade, but, of course, there has not been a corresponding reduction in overheads. Underwriters are watching the position carefully when vessels are brought out of lay-up to start navigating once again. They are trying to make sure that an adequate survey is undertaken at this stage, since, understandably, they do not want to find themselves having to meet claims which arise solely as a result of a vessel having been laid up.

At the time of lay-up, underwriters were more concerned with the position of the vessel and the condition of the hull and machinery, fire, theft and other risks, than with the condition of the cargo. It is thought, therefore, that the condition of vessels and their machinery should be closely checked as they are brought into commission again.

There is keen competition for the insurance of the hulls of many fleets. The old-established London marine market, consisting of underwriters at Lloyd's and major British companies, is still the largest such market in the world. But there has been keen competition from many other quarters, with the result that, in some cases, London has felt obliged to write business at rates which it considered inadequate, or to let it go elsewhere—in the hope that it will return when the competitors have burnt their fingers.

pool claims among themselves which are over a certain agreed figure. In addition, this pool of clubs reinsures on an excess basis—absorbing much of the capacity of the world insurance market in the process.

Coagulation of vessels at certain ports in the Middle East and elsewhere does not really present problems so far as the vessels are concerned, apart from the accumulation of risk (which could prove particularly serious in the case of, say, war risks). For cargo, either the premium rate takes into account the anticipated delay, or the Port Delay Clause is added, restricting cover to 60 days after arrival at the port, with an additional premium being payable for any extension.

For hull underwriters, a problem in these inflationary days is that non-essential repairs may be deferred for some years. There is not quite the same difficulty in the aviation sector, because claims payments for total losses represent a higher proportion of the total.

There is keen competition in the international insurance market for aviation business, and some premium rates have been cut quite significantly over the past few years. While, as is well known, there has been an improvement in the overall safety record, it is most unlikely that it will be possible for the trend to continue at the same rate in the future.

Liabilities

In addition to the commercial insurance market, P and I Clubs are an important form of protection for shipowners. Nearly all the international clubs are based in or have strong connections with Britain and, essentially, they insure shipowner liabilities on a mutual basis. A wide range of risks are covered, including collision liabilities out of the hull and machinery policies, damage to cargo, delivery, damage, over-carryage etc. Liabilities in connection with pollution, also, are covered.

In view of the substantial arised with goods being transported by air it is that there is a significant reduction in the pack- log provided, compared with the

experience of this type or risk in the past, and, as a result, to a great extent, have had to "buy" their experience through meeting higher than expected claims.

Some owners have found it worthwhile to insure third party risks in one market, and to "top up" that basic cover with fire and theft risks arranged in a different market.

In view of the greater use of British vehicles on the Continent and elsewhere, steps have been taken to provide "on the spot" service in some of the less accessible countries. For instance, a recovery service in Turkey has been set up, solely for the benefit of insurers. It is hoped that this will result in lower claims levels, and that goods will reach their destinations more quickly after an accident than, otherwise, would have been possible. It is hoped

that the idea may be extended to other areas—and, perhaps, to include breakdown, as well as accident.

Insurers which insure hauliers for their liability to goods carried estimate that damage accounts for about 61 per cent of total claims cost with theft taking 30 per cent. Some consider that collusion with the driver is responsible for up to 50 per cent of thefts. While there is a school of thought that the risk of infidelity should not be covered by transit policies, many insurers feel that it would not be practical to exclude it, and that it would be a retrograde step. While little can be done on the risk prevention side regarding damage and fire claims, most insurers are trying to take a positive approach toward security; but there is a limit to the conditions which hauliers are prepared to accept.

John Gasele

Cover

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In view of the greater use of British vehicles on the Continent and elsewhere, steps have been taken to provide "on the spot" service in some of the less accessible countries. For instance, a recovery service in Turkey has been set up, solely for the benefit of insurers. It is hoped that this will result in lower claims levels, and that goods will reach their destinations more quickly after an accident than, otherwise, would have been possible. It is hoped

that the idea may be extended to other areas—and, perhaps, to include breakdown, as well as accident.

Insurers which insure hauliers for their liability to goods carried estimate that damage accounts for about 61 per cent of total claims cost with theft taking 30 per cent. Some consider that collusion with the driver is responsible for up to 50 per cent of thefts. While there is a school of thought that the risk of infidelity should not be covered by transit policies, many insurers feel that it would not be practical to exclude it, and that it would be a retrograde step. While little can be done on the risk prevention side regarding damage and fire claims, most insurers are trying to take a positive approach toward security; but there is a limit to the conditions which hauliers are prepared to accept.

John Gasele

Pipelines have a long way to go

THE DEVELOPMENT of North Sea oil and gas has provided a clear demonstration of the importance and advantages of pipelines in the transmission of liquids and gases. Within a few months the entire British gas system will be fed on offshore natural gas, while the few months the entire British will be self-sufficient in its oil needs, most of the supplies flowing through the Brest, Nioisan, Forties and Piper pipeline systems.

Pipelines not only have a contribution to make to the transportation of energy, they can be regarded as an energy saver in their own right.

A typical point made in Prof. Barry Commooer's book, *The Poverty of Power*, just published, is that one survey of non-Communist pipelines estimated that a well over 23,580 miles of four-inch and larger lines should have been laid during 1976, at a total cost of well over \$6.75bn. Some 7,500 miles of this total was earmarked for the U.S.

The industrialisation plans of Middle East oil producers are also providing the pipeline and process plant industries with an incentive market. The emergence of gas as a major fuel in Europe and the problems of declining gas production in the U.S. are also encouraging Middle East countries to gather and process associated gas, much of which has been wasted in the past.

The growing importance of the North Sea oil and gas industries cannot be overlooked in any review of pipelines, however. So far more than 1,500 miles of sub-sea lines have been laid in the North Sea and on the basis of programmes already under way the network should reach over 2,000 miles by 1980. Stockbrokers Wood, Mackenzie have suggested that an additional 1,500 miles—over and above these figures—are now on the drawing board or in the "possible" category.

It is a sad fact—at least from the U.K. balance of payments point of view—that only a small proportion of this main offshore pipeline network has been manufactured in Britain. Most of the pipelines have been coming from the Continent or Japan.

Latest Government statistics show that in 1975 only 5 per cent of the offshore pipeline market (worth £38m. in 1975 and £85m. in 1974) was met by British companies. For several years British Steel Corporation has been discussing the possibility of adding the necessary capacity so that it might at least bid for the large diameter, high specification pipeline work.

But late in January the Corporation announced that it was to invest £8.5m. at its Hartlepool pipe mill to enable it to make the necessary grades. The Tubes Division is to expand the 44-inch pipe mill, a move which could enable the Corporation to make up to 90,000 tonnes of offshore pipeline a year from 1979 in return for a relatively modest outlay.

In recent years there has been a good deal of criticism within Government departments responsible for North Sea supplies over BSC's lack of sub-sea pipe-making facilities. BSC argued, however, that a world over-capacity in heavy pipes production and consequent price competition could make a large new investment unprofitable.

The Corporation's decision to compete to this market after all is probably influenced by the prospect of a gas gathering pipeline network to be built in the North Sea. Initial studies have shown that an 800-mile pipeline

could deliver 1bn. to 1.5b cubic feet a day of natural gas for the national grid. Such a scheme could cost over £2bn.

However, the form of the pipeline network has still to be decided. It is not certain, for instance, whether gas finds its link to the system. Neither is clear whether the network will be entirely self-supporting based on an existing gas pipeline such as the Frigg system or if one intended for Brent gas. These are some of the possibilities which are to be reviewed by a joint public-private enterprise company in a £5m. study expected to be completed about a year's time.

As might be expected, the U.S. emerged as the biggest spender on pipelines last year. One survey of non-Communist pipelines estimated that a well over 23,580 miles of four-inch and larger lines should have been laid during 1976, at a total cost of well over \$6.75bn. Some 7,500 miles of this total was earmarked for the U.S.

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THE GOVERNMENT'S EXPENDITURE PLANS

INDUSTRY

Emphasis still on jobs

AFTER ALL the bluffing and puffing about giving priority to industry over the past year, the latest White Paper on Public Expenditure does indeed show that the total sums allocated to trade, industry and employment have emerged relatively less swayed than other sectors.

ECGD's obligations to refinance a proportion of fixed rate sterling credits provided by the clearing banks by encouraging the use of foreign currency financing of medium and long-term export credit—a move which has brought some criticism from exporters.

Against these cuts—worth around £350m. in the next financial year and £470m. in 1978-79 at 1976 survey prices—the Government has moved to raise employment assistance in other ways by a number of schemes such as the temporary employment subsidy, the job release programme, and expansion of the employment transfer scheme and apprentice training.

Under the umbrella of assistance to industry, by far the largest proportion of funds is going to a few major companies which have had to be taken over by the Government. Although the NEB is being encouraged to move into a restructuring role, most of its funds

are likely to be spent on supporting British Leyland, Rolls-Royce and ICL (on Lord Ryder's own estimates, around £70m. a year will be needed by Leyland). In addition to this the Government has put in a sum of £250m. direct assistance to Leyland over the next five years while Chrysler is due to take some £95m. between 1976 and 1978—implying that more than half the assistance to industry under Section 8 of the Industry Act will be spent on these companies alone.

Whether the full dimension of the tragedy will ever become known is unclear. An official inquiry has been ordered but there is no assurance that its findings will be made public or that the number of Soviet citizens who were killed will ever be known.

Within hours after the fire broke out, hundreds of uniformed internal troops formed a human ring around the north wing of the hotel. They were supplemented by hundreds of militia.

TRADE, INDUSTRY AND EMPLOYMENT

Table with 5 columns: 1975-76, 1976-77, 1977-78, 1978-79. Rows include Regional support and regeneration, Industrial innovation, General support for industry, Support for nationalised industries, International trade, etc.

* These figures represent the increase/decrease compared with those given in the last White Paper (Cmd. 6393) revised at 1976 prices.

Lame ducks

For those who argue that the Government must move away from support for "lame ducks" and blanket support for regional employment, the White Paper shows just how difficult it is to effect such a major shift.

The whole purpose of publishing the A-Z is "to give workers a weapon with which to fight for Bullock," but the problem appears to be that many on the left are also less than enthusiastic about the report, seeing it as leading to the sort of "class co-operation" which they



"I want it hung just over the coffee percolator!"

Unspeakable bespoke

As you wait anxiously for the Chancellor's promised income tax cuts allow your mind to hoggle zenitly at the following.

Textile group Lincroft Kilgour have just produced their annual report which mentions, inter alia, the marked recovery in the export performance of their cloth merchandising division together with a steady increase in sales of suits by their bespoke tailoring companies, largely, it adds, to foreign visitors.

to put out, was a major catastrophe and eye-witnesses reported people trying to leave their burning hotel room with knotted bedsheets and cries for help from the burning upper storeys.

What, asks the latest Portuguese post-devaluation joke, is the high of austerity? Answer: "A man with a banana peel asking his greengrocer for a re-fill."

Observer

Resources

Publication of the detailed survey on expenditure over the next five years follows a year in which more changes were made to this sector than any year. On the retrenchment side, the Government acted

Against these cuts—worth around £350m. in the next financial year and £470m. in 1978-79 at 1976 survey prices—the Government has moved to raise employment assistance in other ways by a number of schemes such as the temporary employment subsidy, the job release programme, and expansion of the employment transfer scheme and apprentice training.

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HOUSING AND ROADS

Blow for construction

EXPENDITURE reductions in the housing sector will be as severe as Mr. Healey said last December and the Government has increased housing improvement expenditure in 1978-79 by £100m.

With an eye on the industry's serious unemployment situation, however, the Government has increased housing improvement expenditure in 1978-79 by £100m. Improvement grants to the public have not been materially affected.

So while the house builders may have largely escaped any further damage to their already seriously depleted order books, other areas of general construction will continue to be harmed by real cuts in spending and, in particular, the continuing ban on a wide range of work from road schemes, car parks, public transport projects, water and sewerage schemes to most categories of school buildings, Government accommodation work and local environmental projects.

Michael Cassell

SOCIAL SERVICES

Almost at a stop

THE DEVELOPMENT of the welfare state is at a standstill, although the onward march of its cost, and of the number of publicly-paid employees who run it, has not yet been brought to a halt.

Most of the £5.5bn. health and personal services budget is subject to one or another type of cash limit, with varying degrees of stringency—the exception being the £1bn. family practitioner part of the health service. Yet the limits have proved ineffective in the case of the personal social services, whose cost has escalated from £448m. in 1971-72 to just over £1bn. this year, at the constant "funny money" prices used in the survey. In real, honest, cash money the increase has therefore been more of an explosion than an escalation.

On the health side the net effect of all last year's cuts is a "real" decrease of £88m. on the estimated £6.5bn. for 1977-1978—1.35 per cent. down, followed by a slightly larger fall of £122m. next year, always assuming that the personal social services sector is brought under control. Nearly all the fall is in projected capital spending.

Incalculables

None of the £11.2bn. social security budget is subject to cash limits (except for the £0.5bn. that goes on administration and "miscellaneous services"). But there is a genuine difficulty here. The total amount spent will be more if unemployment increases. Governments are reluctant to make precise predictions about this. Rates of

In short, on this 35 per cent. of the total spending programme, the White Paper gives little room for certainty about next year's spending, and none for faith that what is being spent is producing value for money.

Joe Rogaly

MEN AND MATTERS

Workers Control back Bullock

As a general rule it is a fairly safe bet to assume that whatever powerful lobbies are wholeheartedly against cannot be all wrong. The CBI's current campaign against the Bullock report appears to be in this category so it was with considerable interest that we received a delicate pink covered booklet from the North London Workers Control Group which turns out to be about as enthusiastically in favour of Bullock as the CBI is against.

The group's Bullock A-Z, as it is called, is described as "by far the cheapest summary of the report and just as accurate and useful as the more posh versions." Paragraph four of the preface leaves no doubt as to where they stand — "Where mainly social the Bullock reforms attack the very heart of capitalism — the organisation of production, distribution and exchange."

After that it comes as no surprise to read "it's small wonder then that the CBI are such dogged opponents of Bullock."

The Soviet Union is usually highly secretive about accidents or natural disasters and for this reason it is still not known how many people died or were injured in the fire this weekend at Moscow's Hotel Rossiya. Unofficial estimates vary from 20 to 60 dead.

Moscow's mighty hotel blaze

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Adrian Hamilton

Porsche advertisement featuring the Porsche 924 car, listing main dealers across the UK (London, South West, West Midlands, East Midlands, East Anglia and Essex, North West, North, South East, Scotland, Northern Ireland, Channel Islands) and contact information for Porsche Cars Great Britain Ltd.

COMPANY NEWS

Alexanders Discount starts well

THE FALL in interest rates, which started at the end of last year...

Kellock Factors and the change in the company's investment policy...

of basic pension plus attaching bonus from £4.25 per cent. in respect of annual premium...

Olives Paper Mill back in profit

A TURNAROUND, from a pre-tax loss at half-way to a profit, was achieved by paper manufacturers...

Advances at Carloli & Tyneside

GROSS REVENUE for the year to January 31, 1977, at Carloli Investment Trust rose from...

Standard Life bonus

Standard Life Assurance, the largest Scottish life company, is increasing its bonus rates for 1976...

BELGRAVE ASSETS

Shareholders in Belgrave Assets have endorsed the investment in...

FFI TERM DEPOSITS

Deposits of £1,000-£25,000 accepted for fixed terms of 3-10 years. Interest paid gross, half-yearly. Rates for deposits received no later than 4.3.77.

Optimism at Lincroft Kilgour

In his annual statement for the year ended September 30, 1976, Mr. Tony Holland, the chairman of Lincroft Kilgour, the menswear manufacturing and textiles group...

BOARD MEETINGS

The following companies have notified dates of Board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering directors' remuneration...

Premier offers £1.2m. for Ball & Collins

Tormia have been agreed where Premier Consolidated Oilfields will offer to acquire the capital of Ball and Collins (Oil and Gas).

Tor Trust up at halfway

On total income up from £233,249 to £261,904, pre-tax profit of Tor Investment Trust for the six months to January 31, 1977, was £124,111 against £109,833...

Spring Grove jumps 22 1/2%

Profit before tax of Spring Grove Industrial Services for the year ended January 31, 1977, was £1,919,399, compared with £1,583,702 for the year to 31.01.1976.

Offer rejected by Fags

The Board of Antofagasta (Chili) and Bolivia Railway Company and their advisers Baring Brothers are not recommending the £1.8m. offer by Deltac Trust and L.E.T. Investments for the 46 per cent. of ordinary and 70.3 per cent. of preference shares of the company not already owned.

Newman Ind. sees progress

Strong optimism about the prospects for Newman Industries in the current year was expressed by Mr. Alan Bartlett, the chairman, at the week-end.

Fosco Minsep in Venezuela

Fosco Minsep has formed a new joint venture company, Fosven, with a Venezuelan partner, Atacavi. The company plans to start manufacturing operations during the current year and is already marketing Fosco Minsep products for metalurgical industries in Venezuela.

Scottish Life

Scottish Life Assurance Company has increased its immediate...

ISSUE NEWS AND COMMENT

Rights, placing and requote for Habit

Habit Precision Engineering, formerly Gloucester and Cheltenham Investments, is proposing a rights issue, a placing and a requote for the shares.

The forecast for the current year to September 30, 1977, is that the group will make profits of £237,000 before national interest of £25,000 leaving pre-tax profits of £212,000.

On this basis the directors expect to pay net dividends amounting to 1.3p per share. On the rights price of 30p the gross-up yield would be 10 per cent. and the p/e ratio 8.6 before exceptional items.

The net tangible assets of the enlarged group are shown at £252,256.

Dealings are expected to start in the shares, which were suspended last December at 45p when Gloucester announced its intentions to take over Habit Diamond Tooling, on Friday, March 4.

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comment

Habit still has the racing stadium of the old Gloucester and Cheltenham Greyhound in its books, but that is the only link with the past, and that is going soon, judging by the company's comments. It is a precision engineering company with a steady profit record and a forecast of £237,000 before interest charges coming to shareholders with a rights issue. The forecast does not look that impressive against the £252,256 made by Habit on its own in 1976, but perhaps time will prove the forecast conservative. Meanwhile the pro forma balance sheet shows cash of £252,256 and with over £200,000 likely to come from the sale of the stadium, Habit is already casting its eye on likely acquisitions. Net assets per share are 19p and the rights price of 20p is reasonably pitched though when dealings start, the opening price is likely to be somewhere under 30p rather than the suspension price of 45p.

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FOREIGN AND COLONIAL

In accordance with the terms of the original loan agreement, Foreign and Colonial Investment Trust repaid its loan of Sw.Frs.12m. from Williams and Glyn's Bank on February 24.

Table with columns: FUND NAME, RATES FOR DEPOSITS OF £1,000 AND UPWARDS FOR W/E 27.2.77. Includes entries like 7-Day Fund, 1-Month Fund, etc.

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HITACHI ZOSEN KABUSHIKI KAISHA advertisement. Includes logo, company name, U.S. \$30,000,000, 7 3/4 per cent. Guaranteed Notes due 1984, and a list of international banks.

ENTERTAINMENT GUIDE

OPERA & BALLET

ENGLISH NATIONAL OPERA... THE ROYAL OPERA... COVENT GARDEN...

THEATRES

GARRICK THEATRE... THE ROYAL THEATRE... GUILDHALL...

THEATRES

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Letters to the Editor

Avoid dangers of concentration

From The Head, Department of Management, Manchester Polytechnic. Sir—At last we have well-researched data indicating the dangers of industrial concentration and the importance of the small company...

Power as a potential export

From Mr. W. Whalley. Sir—Sir Alan Cottrell's letter (February 22) well illustrates the dilemma facing our policy makers in respect to nuclear power...

Baseless fabric of our vision

From Mr. M. Ashfield. Sir—His many fans would not usually judge Samuel Brittan to be lacking in radical ideas, or to have failed to follow through by the force of an argument...

Repel some boarders

From Mr. N. Baker. Sir—I hope your readers will not swallow whole the simple assertion by the chairman of the British Tourist Authority...

ART GALLERIES

ASIZA presents SALAH TAMER, Egyptian painter. NEWHOUSE HOUSE GALLERY, 105, Kensington Church St., W.2. 10017 WOLFRAM SQUARE, 7, W.2. 200-500.

CLUBS

THE CLUBS. THE CLUBS. THE CLUBS. THE CLUBS. THE CLUBS.

Telford Development Corporation advertisement for Cinzano Vermouth. Features a large image of a Cinzano bottle and text: 'The bright lights taste comes to Telford. When the Cinzano people decided to bottle their famous vermouth themselves in Britain, they went determinedly about the business of finding the best possible location for their new project...

Small advertisement for 'the Stock' and 'HOME'. Text: 'Name Position Company Address You'll be a site better off in Telford.'

WEEK'S FINANCIAL DIARY

The following is a record of the principal business and financial engagements during the week. The Board meetings are mainly for the purpose of considering dividends and official indications are not available...

Table of financial diary entries including company names, share prices, and dividend information. Includes sub-sections for COMPANY MEETINGS, BOARD MEETINGS, and DIVIDEND & INTEREST PAYMENTS.

Businessman's Diary

U.K. TRADE FAIRS AND EXHIBITIONS

Table listing U.K. trade fairs and exhibitions with columns for Date, Title, and Venue. Examples include Iodan Electronic Components Exbn and Boat and Leisure Life Show.

OVERSEAS TRADE FAIRS AND EXHIBITIONS

Table listing overseas trade fairs and exhibitions with columns for Date, Title, and Venue. Examples include International Boat Show and International Spring Fair.

BUSINESS AND MANAGEMENT CONFERENCES

Table listing business and management conferences with columns for Date, Title, and Venue. Examples include Lamso: Corporate Man. Dev. in Local Government and CENECA: Agriculture and Frozen Foods.

W. J. PYKE (Holdings) Limited (Wholesale butchers). Safer points for the year to 30th June, 1976 by W. J. Pyke, the Chairman. As will be seen, the Group regrettably incurred a net trading loss for the year...

The Scottish American Investment Company Limited. SUMMARY OF THE YEAR. Net Value increased by 15% during the year, compared with a fall of 3.9% in the F.T.A. All Share Index.

Advertisement for Offshore Trust Services, featuring a globe and text: '... THAT HELPS YOU OUT THERE'. Includes contact information for OTC '77 and details about offshore investment opportunities.

To-day's Events. Mr. Alan Williams, Minister of State, Industry, presents awards in English Industrial Estates Corporation competition for advance factory design, Gateshead. EEC fish conservation measures in force from today (initially until April 30) are: (1) Total ban on herring fishing in North Sea...

Industrial Hanover Fair 1977. Room service—Telex and telephone facilities—Multi-lingual top secretaries—Hostesses—Car service—Change—Tickets for theatre, opera, cabaret, etc.—Facilities for taking and forwarding messages—Business address facilities the whole year.

TURNER Manufacturing Co. Limited. RESULTS FOR 53 WEEKS TO 2nd OCTOBER 1976. TURNOVER: 19,639; PROFIT BEFORE TAX: 2,234; DIVIDENDS PER 25p SHARE: 105p; EARNINGS PER 25p SHARE: 105p.

This week in Parliament. TO-DAY: Commons—Debate on Public Lending Right Bill committee; Criminal Law Bill report; Administration (5 p.m., room 7). WEDNESDAY: Commons—Coal Industry Bill, second reading; Remaining stages of Return to Officers (Scotland) Bill; Lords—Research and Development since Rothschild Report; Debate on Concorde; Select Committees—Expenditure, Art and Home Office sub-committee...

The Lincroft Kilgour Group Ltd. Summary of Accounts. Year ended 30th September. Turnover: £9,846,151; Profit before tax: £764,959; Earnings per share: 10.37p; Dividends per share: 3.10p.

LEGAL NOTICES. In the High Court of Justice, Chancery Division Companies Court, in the Matter of E. F. CLEANING CONTRACTS LIMITED and in the Matter of the Companies Act, 1947. NOTICE IS HEREBY GIVEN that a Petition for the winding-up of the above-named Company has been presented to the Court...

BY TONY HAWKINS

EUROBONDS

OVERSEAS MARKETS

Dollar sector fears after 'quietest week for 18 months'

AT THE END of what one dealer described as the market's quietest week for 18 months, dollar sector prices had a look of vulnerability about them...

to difficult market conditions. Accordingly, one assumes that the issue will be priced at a discount, especially the longer year maturity and an 8 1/2 per cent average life...

Table with columns: DOLLAR BONDS, Amount, Maturity, Av. life, Coupon, Price, Lead manager, Offer yield. Lists various issuers like Toyo Kanetsu, Saab-Scania, Norippe, etc.

cent. while the 10 per cent of London Stock Exchange. The \$1.4 million issue seems to be well-received given the market's production for shorter term paper...

The Sparkassen issue seems to be well-received given the market's production for shorter term paper. It is being called a 'direct placement' rather than a private placement in that it is being offered and...

In the Swiss Franc market the World Bank is due to launch a large issue in a series which will be published this week...

Expected to be a popular issue. The Murala Manufacturing issue of 4m. shares was priced with the shares offered at \$4.02 etc. putting a value of just over \$16m. on the transaction...

BONDBRIDGE INDEX and EUROBOND TURNOVER tables. Includes columns for Bond, High, Low, Friday, and values.

INDICES

NEW YORK - DOW JONES table. Shows industrial, transport, utility, and trading volume indices with daily and 52-week data.

JOHANNESBURG SHARES table. Lists various companies like Anglo American, East Rand, and their share prices.

GERMANY table. Lists major German companies like I.G. Farben, Mannesmann, and their share prices.

MILAN table. Lists major Italian companies like Alitalia, Eni, and their share prices.

OVERSEAS SHARE INFORMATION

Large table containing share information for various countries: NEW YORK, CANADA, AMSTERDAM, BRUSSELS/LUXEMBOURG, STOCKHOLM, SWITZERLAND*, OSLO, TOKYO, VIENNA, BRAZIL*, HONG KONG, and SPAIN. Each section lists company names and their share prices.

AUTHORISED UNIT TRUSTS

Table listing various unit trusts and their performance metrics, including Abbey Unit Tr. Mgrs. Ltd., British Life Unit Tr. Mgrs. Ltd., and many others.

FINANCIAL TIMES STOCK INDICES

Table showing stock indices for various categories like All-Share, Industrial, and International, with columns for Feb 24, Feb 23, and % change.

HIGHS AND LOWS S.E. ACTIVITY

Table detailing high and low stock prices and S.E. activity for various sectors.

FT-ACTUARIES INDICES

Table showing actuarial indices for different groups and years.

SIPORE STOCKS

Table listing Singapore stocks with columns for company name, price, and change.

KONG

Table listing Hong Kong stocks with columns for company name, price, and change.

SHARE INFORMATION SERVICE

Text providing information about the Share Information Service, including contact details and a disclaimer.

INSURANCE, PROPERTY, BONDS

Table listing insurance, property, and bond products from various providers like Abbey Life, Carthage, and others.

OFFSHORE AND OVERSEAS FUNDS

Table listing offshore and overseas funds from providers like Arthurson Securities, Charterhouse, and others.

NOTES

Notes section containing various financial notices and announcements.

مخبرتنا الاصل

HABIT Precision Engineering Limited—Continued

Statement of Source and Application of Funds

Table showing financial data for years ended 31st December 1974, 1975, 1976, and 9 months ended 30th September 1976.

Accounting Policies of the Habit Diamond Group

The principal accounting policies of the Habit Diamond Group which have been used consistently in the foregoing summaries are as follows:

The foregoing summaries incorporate the accounts of Habit Diamond and of its subsidiaries. At 30th September, 1976 the following companies were wholly owned subsidiaries of Habit Diamond:

- Habit Diamond Distributors Limited
Habit Diamond Drilling Limited
Habit Geometric Tooling Limited
Winchester Machine Tool Co. Limited
Sutton Diamond Tools Limited
Micro-Tubes Limited

Habit Diamond also owns 90 per cent. of the issued share capital of Precision Tool Products (Northern) Limited. Those subsidiaries marked with an asterisk are in liquidation.

Sales represent goods and services involved in the normal course of trading in 12 parts outside the Habit Diamond Group after deduction of returns and allowances and value added tax.

Depreciation: No depreciation is provided in respect of freehold property. Depreciation is provided on the cost of all other fixed assets using the reducing balance method at a rate of 10 per cent. per annum.

Deferred taxation: Deferred taxation takes account of timing differences between the treatment of items for accounts purposes and their treatment for taxation purposes using the liability method.

Costs and Work in Progress: Work in progress is valued at the lower of cost and net realisable value. It is not possible to determine the cost of each residual item held in stock.

Fixed Assets: Fixed assets acquired prior to the 1st January, 1974 is stated at professional valuations made at that date. All subsequent additions are stated at cost.

Share Capital: Authorised, issued and fully paid share capital of Habit Diamond has remained unchanged at 10,000 Ordinary Shares of £1 each.

Deferred Taxation: At 30th September, 1976 the balance of deferred taxation using the liability method is as follows:

Subsidiary Companies: A table listing subsidiary companies and their financial details.

September, 1976 have been prepared and audited for the purpose of this Report. Yours faithfully, NEVILLE RUSSELL & CO., Chartered Accountants.

Profit Forecast

1 Forecast and Assumptions: The profit forecast has been prepared on the basis that (a) the acquisition of Habit Diamond and the 10 per cent. minority interest in PDP and (b) the cessation of greyhound racing had taken place on 1st October, 1976.

- 1 There will be no significant changes in the present management or accounting policy.
2 The turnover for the twelve months to 30th September, 1977 will be on the basis that sales will continue in line with the levels and trends experienced in the three months to 31st December, 1976.

2 Letters: The following are copies of letters from Neville Russell & Co. and Rowe Rudd & Co. Limited concerning the profit forecast:

The Directors, Habit Precision Engineering Limited, 48 St. James's Place, London SW1A 1PC. Dear Sirs, We have reviewed the accounting bases and calculations for the profit forecast for the year ending 30th September, 1977 of Habit Precision Engineering Limited.

The Directors, Habit Precision Engineering Limited, 48 St. James's Place, London SW1A 1PC. Dear Sirs, We refer to the forecast of the profits of Habit Precision Engineering Limited and its subsidiaries for the year ending 30th September, 1977 which is contained in the Particulars dated 25th February, 1977.

Statutory and General Information

1 The Company: The Company was incorporated in England as a public company on 14th October, 1963 under the name of the Gloucester & Cherttenham Investments Limited.

2 Subsidiaries: The Company has the following subsidiaries (all private companies incorporated in England): The Gloucestre Group, Gloucester & Cherttenham Greyhounds (Leasowas) Limited.

3 Issue Arrangements: Under Contract No. 5 below, subject (inter alia) to the Council of The Stock Exchange granting a waiver...

4 Acquisition of Habit Diamond: Under Contract No. 6 below, subject (inter alia) to the Council of The Stock Exchange granting a waiver...

Under Contract No. 4 below, subject (inter alia) to completion of the acquisition of the whole of issued share capital of Habit Diamond...

5 Shareholdings: Immediately following this Report the acquisition of Habit Diamond and the proposed rights issue of Ordinary Shares of £1 each in POP/ISMS 10 per cent. of the issued share capital of PDP...

6 Taxation: The Directors have been advised by Neville Russell & Co that immediately following the proposed transactions the Company will be a close company as defined in the Income and Corporation Taxes Act 1970.

7 Articles of Association: The Articles of Association of the Company include provisions to the following effect: Subject to the provisions of the Companies Act 1965 all or any of the rights or privileges for the time being attached to any shares may be varied or abrogated...

8 Miscellaneous: The following are copies of letters from Neville Russell & Co. and Rowe Rudd & Co. Limited concerning the profit forecast: 30 Artillery Lane, Bishopsgate, London EC2M 7LT, 25th February, 1977.

9 Material Contracts: The following contracts, not being contracts in the ordinary course of business, have been entered into by the Company since 1st January, 1974 and are of material importance to the Company.

10 Disclosures of Interest: Mr. G. Ferguson Lacey and Mr. R. C. McBride are both Directors of Ferguson and each holds one half of the issued share capital of the Company...

11 Miscellaneous: The following are copies of letters from Neville Russell & Co. and Rowe Rudd & Co. Limited concerning the profit forecast: 30 Artillery Lane, Bishopsgate, London EC2M 7LT, 25th February, 1977.

12 Consents: Neville Russell & Co., Rowe Rudd, R. Stewart Rowles & Co., Shirley Hamlin and Shirley Hamlin have each and severally given their respective written consents to the issue of this Report...

13 Documents for Inspection: Copies of the following documents will be available for inspection at the offices of Clifford-Turner, Blythburgh House, 15 New Bridge Street, London EC4V 6JF during normal business hours...

Henry Boot Great people to build with Henry Boot Construction Limited, Dronfield, Sheffield S18 6XR

FT SHARE INFORMATION SERVICE

INDUSTRIALS

BRITISH FUNDS

Table of British Funds including 'Shorts' (Lives up to Five Years), Five to Fifteen Years, and Over Fifteen Years.

INTERNATIONAL BANK

Table of International Bank shares including 10% and 5% preferred shares.

CORPORATION BONDS

Table of Corporation Bonds including 10% and 8% preferred shares.

COMMONWEALTH & AFRICAN BONDS

Table of Commonwealth & African Bonds including 10% and 8% preferred shares.

FOREIGN BONDS & RAILS

Table of Foreign Bonds & Rails including 10% and 8% preferred shares.

AMERICANS

Large table of American stocks including various companies like IBM, General Electric, and Ford.

CANADIANS

Table of Canadian stocks including various companies like Canadian National and Royal Bank.

RAILS AND HIRE PURCHASE

Table of Rails and Hire Purchase companies including various railway and hire companies.

BEERS, WINES AND SPIRITS

Table of Beers, Wines and Spirits companies including various beverage companies.

LOANS (Miscellaneous)

Table of various loans including different types of financial instruments.

DRAPERY AND STORES

Table of Drapery and Stores companies including various retail companies.

BUILDING INDUSTRY, TIMBER AND ROADS

Table of Building Industry, Timber and Roads companies including various construction and infrastructure companies.

BUILDING INDUSTRY—Continued

Continuation of Building Industry table with more companies and their share details.

CHEMICALS, PLASTICS

Table of Chemicals and Plastics companies including various chemical manufacturers.

CINEMAS, THEATRES AND TV

Table of Cinemas, Theatres and TV companies including various entertainment companies.

DRAPERY AND STORES

Continuation of Drapery and Stores table with more companies.

BUILDING INDUSTRY, TIMBER AND ROADS

Continuation of Building Industry, Timber and Roads table with more companies.

DRAPERY AND STORES—Continued

Continuation of Drapery and Stores table with more companies.

ELECTRICAL AND RADIO

Table of Electrical and Radio companies including various electronics manufacturers.

ENGINEERING, MACHINE TOOLS

Table of Engineering and Machine Tools companies including various engineering firms.

DRAPERY AND STORES

Continuation of Drapery and Stores table with more companies.

BUILDING INDUSTRY, TIMBER AND ROADS

Continuation of Building Industry, Timber and Roads table with more companies.

ENGINEERING—Continued

Continuation of Engineering table with more companies.

FOOD, GROCERIES, ETC.

Table of Food, Groceries, Etc. companies including various food and grocery companies.

HOTELS AND CATERERS

Table of Hotels and Caterers companies including various hospitality companies.

INDUSTRIALS (Miscellaneous)

Table of Miscellaneous Industrial companies including various manufacturing and service companies.

Large vertical table of Industrial stocks including various companies and their share details.

Conversion factor 0.717 (0.7299)

مكتبة الرشد

INDUSTRIALS—Continued

Table of industrial stocks including companies like British Petroleum, Shell, and ICI, with columns for stock name, price, and other financial metrics.

MOTORS, AIRCRAFT TRADES

Table listing various motor and aircraft related companies and their financial data.

Commercial Vehicle

Table listing commercial vehicle companies and their financial data.

Components

Table listing component manufacturers and their financial data.

Garages and Distributors

Table listing garage and distributor companies and their financial data.

NEWSPAPERS, ADVERTISING

Table listing newspaper and advertising companies and their financial data.

PROPERTY—Continued

Table listing property-related companies and their financial data.

SHIPPERS, REPAIRERS

Table listing shipper and repairer companies and their financial data.

SHIPPING

Table listing shipping companies and their financial data.

SHOES AND LEATHER

Table listing shoe and leather companies and their financial data.

SOUTH AFRICANS

Table listing South African companies and their financial data.

TRUSTS—Continued

Table listing trust companies and their financial data.

OVERSEAS TRADERS

Table listing overseas trader companies and their financial data.

RUBBERS AND SISALS

Table listing rubber and sisal companies and their financial data.

TEAS

Table listing tea companies and their financial data.

MINES

Table listing mining companies and their financial data.

EASTERN RAND

Table listing Eastern Rand mining companies and their financial data.

FAR WEST RAND

Table listing Far West Rand mining companies and their financial data.

FINANCE

Table listing financial companies and their financial data.

DIAMOND AND PLATINUM

Table listing diamond and platinum companies and their financial data.

SANWA BANK advertisement with logo and text: 'Serving the world with financial expertise. SANWA BANK Tokyo, Japan'

MINES—Continued

Table listing mining companies and their financial data.

AUSTRALIANS

Table listing Australian companies and their financial data.

TINS

Table listing tin companies and their financial data.

COPTER

Table listing helicopter companies and their financial data.

MISCELLANEOUS

Table listing miscellaneous companies and their financial data.

NOTES

Notes section containing various financial notices and announcements.

CENTRAL RAND

Table listing Central Rand mining companies and their financial data.

EASTERN RAND

Table listing Eastern Rand mining companies and their financial data.

FAR WEST RAND

Table listing Far West Rand mining companies and their financial data.

REGIONAL MARKETS

Table listing regional market data for various areas.

O.F.S.

Table listing O.F.S. (Overseas Financial Services) data.

IRISH

Table listing Irish market data.

OPTIONS

3-month Call rates

Table listing 3-month call option rates for various companies.

INSURANCE

Table listing insurance companies and their financial data.

Scottish swing may hit Labour

By Ray Perman, Scottish Correspondent

THE FIRST indication of the potential electoral damage to the Labour Party of losing the devolution...

Table with 3 columns: Party, 1977, 1974. Rows include Labour, SNP, Conservatives, Liberals, Others.

The poll, conducted by Professional Studies for the Sunday Mail, gave a 36 per cent of the vote against 36 per cent for the nationalists.

In fact, private assessments by the parties indicate that the loss could be more dramatic.

Weather

U.K. TO-DAY: MAINLY dry. London, Midlands, N. Wales, I. of Man, N. Ireland...

Table with 3 columns: City, High, Low. Lists various cities and their weather forecasts.

Table with 3 columns: Holiday, Day, Location. Lists holiday destinations and dates.

IMF team resumes credit negotiations with Italy

BY DOMINICK J. COYLE

A FURTHER Italian stand-by credit from the International Monetary Fund will, it is expected...

December by the U.K. as part of its own repayment arrangements of a temporary stand-by credit...

The IMF team, which arrived here at the week-end, will concentrate on two aspects of the Andreotti Government's economic programme...

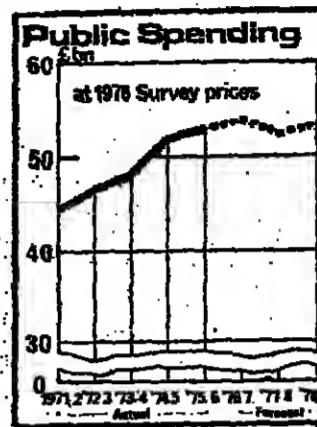
In both cases Sig Andreotti emphasised that the future of his minority government was linked to a successful outcome of the protracted negotiations with the IMF.

ROME, Feb. 27.

THE LEX COLUMN

Dollar still king for bankers

To-morrow, the Board of BanCal Tri-State Corporation is to meet in San Francisco to consider Standard Chartered's \$130m offer...



double counting—the estimate is just £1.8bn. at 1976 prices for 1976-77—this dual total has proved very sensitive to recent economic trends...

Rhodesia Front chief attacks Smith

BY OUR OWN CORRESPONDENT

SHORTLY BEFORE the Rhodesia Parliament begins its debate on proposals to raise racial discrimination in Rhodesia...

Members by disregarding one of the basic principles of the party's policy...

The proposal was first put forward by the ANC at one party conference and has been rejected by other nationalist groups...

SALISBURY, Feb. 27.

Embassy coupons to end

By Stuart Alexander

COUPONS ARE to be stopped entirely on Embassy Gold and Embassy Envoy cigarettes...

Labour's opposition to CAP stiffens

BY RUPERT CORNWELL, LOBBY STAFF

THE THREATENED sale of cut-price EEC butter to the Soviet Union is not only stiffening the Government's resolve to force an overhaul of the Common Agricultural Policy...

Caution call on inflation accounting

By Michael Lafferty

INFLATION accounting issues are too subtle, too complex, and not yet widely enough understood to be resolved by a revolutionary change to a new accounting system...

African connection

Standard Chartered badly needs to diversify its earnings base. Last year around a fifth of its pre-tax profits of £92.3m. came from the Middle and Far East...

Call-up

Mr. Rowan Cronie, Minister of Manpower, who earlier this month took over responsibility for managing the military call-up system after the resignation of Mr. Reg Cowper as Defence Minister...

Devalue

Labour MPs from both the pro and anti Common Market camps were last night urging him to use the issue as added justification for resisting pressure to devalue the "green pound"...

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Labour MPs from both the pro and anti Common Market camps were last night urging him to use the issue as added justification for resisting pressure to devalue the "green pound"...

Caution advised on cuts

that all the resources released from the public sector will be taken up elsewhere, and there is a risk that the policy may 'dig too deep a hole'.

Caution advised on cuts

Reviewing the Letter of Intent, is an inflow from abroad to help check inflation. However, they say it is more important to provide stable conditions for export industries...

HOMEMAKERS

Cubitts have been leading home-builders for over 150 years: from estates for local authorities to whole townships like Thamesmead.

Advertisement for Cubitts Builders, featuring a large 3D logo and text about their services and resources.